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PEBL: A CODE FOR PENETRATING AND BLUNT TRAUMA, BASED ON THE H-ICDA INDEX

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Penetrating and Blunt (PEBL)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

(U) This report describes that PEBL injury-coding system, jointly devised by the Biophysics Branch and the Maryland Institute of Emergency Medicine. The code is based on the H-ICDA system. The PEBL code allows the inclusion of: (1) precise location of an injury including distinguishing parts of an organ, (2) dimensions of the injury; (3) detailed bone injury; (4) limited physiological responses; and (5) a special category describing hemopneumothorax. Both penetrating and blunt injuries can be coded by this system. The code facilitates estimations of mortalities and medical workloads.

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(Hospital adaptation of the International Classification of the World Health Organization). 410 170

PREFACE

The work described in this report was authorized under projects 1R765702D620, Ammunition Effectiveness Testing; 1L662617AH79, Munitions Technology Bioresponse to Trauma; and OASD (HA) Study 77-5, Health Personnel Wartime Individual Capabilities. Extraction of data for this report was begun in January 1977 and completed in May 1977.

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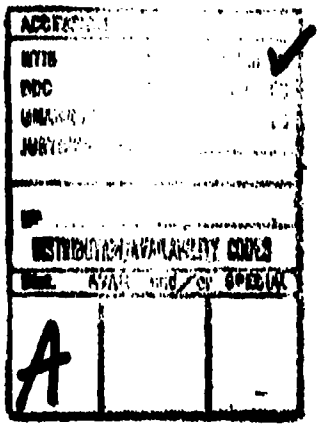
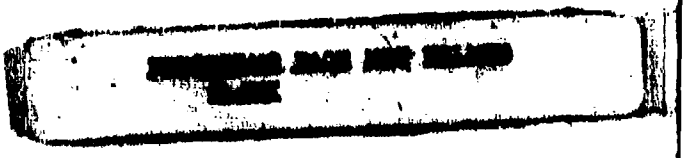
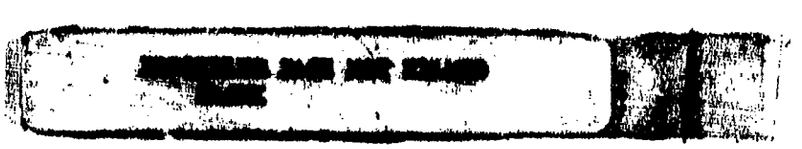




CONTENTS

		Page
I.	INTRODUCTION	7
II.	PRELIMINARY CONSIDERATIONS	7
III.	THE PEBL CODE	8
IV.	EXAMPLES OF CODING USING THE PEBL CODE	10
V.	SUMMARY	13
	REFERENCES	14
	APPENDIX, The PEBL Anatomical Injury Codes	15
	DISTRIBUTION LIST	53



PEBL: A CODE FOR PENETRATING AND BLUNT TRAUMA, BASED ON THE H-ICDA INDEX

I. INTRODUCTION.

Among the objectives of the Ammunition Effectiveness Testing and the Bioresponse to Trauma projects are the following: (1) to estimate the probability of lethality of a given wound or wounds, and (2) to estimate the medical resources needed for treatment of various types and numbers of combat casualties. Development of methodologies for making these estimates was requested of the Biophysics Branch by the Joint Technical Coordinating Group/Munitions Effectiveness (JTCG/ME).

A basic requirement of such a methodology is an injury code, including sufficient relevant detail to discriminate traumatic effects which differ with respect to location, mortality, morbidity, and treatment. The code must distinguish life-threatening injuries from other injuries and be graded by probability of survival. While they were assigned to the Biophysics Branch, Majors Michael Weinstein, Carl Soderstrom, and Andrew Carroll, M.D., US Army Medical Corps initiated the development of such an injury code.

Several existing codes were considered for use in this study. As none of them completely satisfied our needs, an expanded version of the Hospital Adaptation of the International Classification of the World Health Organization[1] (H-ICDA) was developed jointly by personnel of the Biophysics Branch of the Research Division and the physicians and surgeons of the Maryland Institute of Emergency Medicine (MIEM). We have named the code PEBL (Penetrating and Blunt Injury Code). Because of the large amount of data and the possible uses, the information was recorded in a form usable by the computer.

II. PRELIMINARY CONSIDERATIONS.

As the development of any code is a demanding, time-consuming enterprise, existing injury codes were examined for their adequacy for our particular purposes. Among the better known injury codes considered were:

A. The Hospital Adaptation of the International Classification of the World Health Organization (H-ICDA).

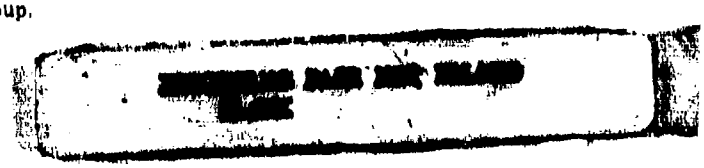
B. The Abbreviated Injury Scale (AIS).[2,3]

C. The US Army Academy of Health Sciences Codes (AHS).*

D. The Illinois Trauma Registry Coding System (ITR).[4]

E. The Systematized Nomenclature of Pathology (SNOP).[5]

* Personal Communication. MAJ R. Nomani, TOMSS Study Group.



After careful examination and consideration, it was concluded that none of the above injury code systems addressed the anatomical injury in the detail required.

A new injury code was developed to allow more specificity by distinguishing parts of various organs, great and peripheral blood vessels, and by introducing sizes of injuries and comprehensive characterizations of bone injuries, central and peripheral nerve injuries.

The H-ICDA code was chosen as the keystone of the Penetrating and Blunt Injury Code System (PEBL). The H-ICDA is used as the primary reporting vehicle by both military and civilian hospitals.

The PEBL code does not replace the existing coding system (H-ICDA), but is simply an extension of it. The first four digits of the PEBL code are the same as those found in the H-ICDA. By expanding the H-ICDA, sufficient detail can be included so that injury descriptions can be related to probability of survival and to surgical procedures and treatments required.

III. THE PEBL CODE.

The basic H-ICDA codes consist of four digits of the form XXX.Z. (In this example, the letters "X" and "Z" represent numbers)) The "Z" is usually the number 0, or 1 to denote either an open or closed injury; occasionally it is Z = 9, which denotes complications.

The PEBL code was formed by appending a variable string of digits of the appropriate H-ICDA codes. This string identifies anatomical disruptions which are different with respect to location, mortality, morbidity, or required treatment.

The code spans the spectrum of injuries from trivial to fatal. It also represents the anatomical injury alone, usually without considering the physiological response. For example, liver injuries are classified without mention of blood loss. Occasionally, practical considerations cause deviations from this concept. Spinal cord injuries are described in terms of functional impairment. Facial nerve injuries are also characterized by functional impairment. There is a special category for hemopneumothorax. The PEBL system also contains provisions for encoding both the sizes of the injuries and the explicit detail of bone injuries.

The nature of the wounding agent, and its particular mechanism of action are not considered relevant to the PEBL code. The complete PEBL injury code is shown in the appendix. Root-code numbers 851 through 853 are adaptations of those existing in use at the Maryland Institute of Emergency Medicine. The H-ICDA root-codes 910-918 for superficial wounds were not used. For the sake of consistency and simplicity, wounds of those types are coded under "open wounds", though some of these wounds are not open. See tabular list for further remarks on the use of the PEBL codes.

In some data sets, the coder may find that answers to various questions are not given. In the PEBL system, the code for either unknown, or missing information is the letter "X". This letter may be inserted in the string at the appropriate location.

It is planned to use the PEBL codes in a comprehensive Computer Man Program currently under development at the Biophysics Branch. By this program, projectile wounds will be simulated and the resultant simulated wounds will be represented by strings of PEBL codes. From these strings, the probabilities of mortality and morbidity will be estimated.

TABULAR LIST

1. Terminology is fairly standard, except that "LACERATIONS" includes both INCISIONS and LACERATIONS, unless otherwise noted.

2. Injuries to the gastrointestinal (GI) tract are coded in a way which allows specific portions to be identified. We believe that it gives one the ability to code GI injuries in a more realistic manner than any other method will allow.

3. Traumatic amputation – includes complete amputations, and also partial ones which are surgically completed.

4. Both entrance and exit wounds are coded. Exit wounds are coded only if the missile exits the skin.

5. Unknown Parameters: the code for missing or unknown data is "X", except in those cases where "X" is specified as an option.

6. Multiple injuries – require multiple codes, as a rule. There are some exceptions, such as mandibular fractures. Some multiple injuries may be coded by prefixing a multiplication factor (see below).

7. Multiple injuries that are exactly the same may be indicated by prefixing the code with (NNN), where NNN = the number of times the code occurs. When only a verbal descriptor is given, the letters "T" (for too numerous to count) or M (for multiple) may be used.

8. Wounds of unspecified size and location are designated by Code 897.6. It may be used with the multiple injury prefix to indicate many wounds of unspecified size and location.

9. "OPEN" wounds of back and limbs take their name from the ICDA book. This term "open" is a misnomer in some cases because we code all our superficial and soft tissue injuries here as well. The ICDA Superficial Wound Codes (910-918) are therefore not used by us.

10. For hip dislocation, coded 835.ZYXa, X = 0 (not applicable) so the code really ends up as 835.ZY0a.

11. OPEN FRACTURE: a fracture is open if there is open muscle injury within a 3.0-cm-radius sphere of any part of the fracture.

IV. EXAMPLES OF CODING USING THE PEBL CODE.

Suppose a soldier has received a bullet wound which resulted in a comminuted fracture to the left side of the sacrum with pubic bone separation. The PEBL code for this wound is 808.ZYXabcdefg. In the code sheets we find the following information:

Apply to all fractures

X = 1 punched out
2 linear ("simple")
3 comminuted
4 depressed
5 compressed
0 unspecified or not applicable

Y = 1 right
2 left
0 unspecified or not applicable

808.Z Fracture of pelvis
808.ZYXabcdefg

Z = 0 closed
1 open
a = 1 pubis
0 not pubis
b = 1 acetabulum
0 not acetabulum
c = 1 ischium
0 not ischium
d = 1 ilium
0 not ilium
e = 1 sacrum
0 not sacrum
f = 1 pubic separation
0 no separation
g = 1 sacroiliac joint separation
0 no separation

The injury is encoded as follows 808.12300001l0. The root code 808. of the PEBL code, is listed in the H-ICDA as "Fracture of Pelvis".

For a second example, assume a soldier receives a penetrating injury to his posterior right thoracic wall, not involving any ribs, producing a contusion and measuring 1.5 cm in diameter. The missile then strikes the right lung and penetrates this organ a total of 4.0 cm. This injury is encoded in two steps. First the right thoracic wall wound is described as follows: 861.ZYXabcdeFGH. The code of this wound is 861.51311100103. The lung wound is described as 861.Zabc and coded 861.3120. The root code 861 is described in the H-ICDA as "injury to heart and lung". Code 861.3 in the H-ICDA is described as "lung with open wound in thorax". In the code sheets we find the following information:

861.Z Thoracic wall injury

861.ZYXabcdeFGH

Z = 4 not open into chest
5 open into chest (penetrate parietal pleura)

Y = 1 right
2 left
0 not specified

X = 1 anterior
2 lateral
3 posterior
0 not specified

a = 1 skin and subcutaneous tissue
0 not

b = 1 overlying muscle
0 not

c = 1 intercostal muscles +/or ribs +/or cartilage
0 not

d = 1 intercostal artery
0 not

e = 1 breast
0 not

F = 1 contusion (any size)
0 none

G = 1 linear defect (tear, laceration), any size
0 none

H = 1 area defect (two dimensional) $<1/4$ cm^2 (e.g., 1/2-cm-diameter bullet might make this)
2 area defect 1/3-1 cm^2 (e.g., 1-cm-diameter hole)
3 area defect 1-20 cm^2 (up to 5-cm diameter)
4 area defect >20 cm^2
0 none

Note: if ribs or sternum are fractured, one should also code 807.

861.Z Lung (adults)

(Note: if thoracic injuries are known in some detail, they should be coded under mediastinum vessels and tracheobronchial tree as well. This classification is relatively gross).

861.Zabc

Z = 2 closed
3 open

a = 1 right
2 left

b = 1 any penetrating or perforating disruption extending through the visceral pleura but <1 cm from chest wall (penetrating less than 1 cm deep into lung)
2 any penetration, perforation, or laceration with maximum penetration 1-7 cm
3 any penetration, perforation, or laceration with maximum penetration >7 cm
4 any contusion, blast, or burst <25 cm^2 in greatest projection (as measured on X-ray or at operation)
5 any contusion, blast, or burst >25 cm^2 and <100 cm^2
6 diffuse injury >100 cm^2
7 any laceration or tear of parietal pleura only

c = 1 autopsy or operation performed but no tracheobronchial or vascular injuries
2 autopsy or operation performed – coded data on other injuries available
0 not specified
3 not done

As a third example, let us consider a blunt impact to the vault of the skull causing a depressed fracture resulting in a contusion to the right frontal area of the cerebrum and also having a further complication, an acute right subdural hematoma. This type of injury is encoded as follows: The depressed skull fracture has the format 800.Za and is encoded 800.02. The contused cerebrum is 851.ZAabc and is written as 851.01111. The subdural hematoma is 852.Zab and is coded as 852.012. The root codes 800, 851, and 852 are compatible with the H-ICDA. The applicable sections from the code sheets are:

Skull Fractures		Codes
800.Za	Fractures of vault	Z = 0 closed 1 open a = 1 linear only 2 depressed 3 penetrating < 2 cm diameter 4 penetrating > 2 cm diameter
851.Z	Cerebral laceration and contusion 851.ZAabc	Z = 0 closed 1 open A = Cerebrum a = 1 right 2 left 3 bilateral 0 unspecified b = 1 frontal area 2 temporal area 3 temporoparietal area 4 occipital area 5 two or more areas, or bilateral 0 unspecified c = 1 worst lesion is contusion 2 worst penetration or laceration is deficit of < 1.5 cm in greatest dimension 3 worst lesion has deficit of > 1.5 cm
852.Z	Subdural or epidural hematoma 852.Zab	Z = 0 closed (cannot be open) a = 1 right 2 left 3 side not specified b = 1 epidural hematoma 2 acute subdural with cerebral injury (contusion) in same site 3 acute subdural without cerebral injury 4 acute subdural – cerebral injury not specified

V. SUMMARY

This report describes the PEBL injury-coding system. It is based on the H-ICDA system from which the three-digit root-codes are carried over unchanged (in most instances) to form the first characters of a PEBL code string. To the root-code are added further characters to a maximum of 16 (total 19 digits) including the root-code), which allows the inclusion of: (1) precise location of injury including distinguishing specific parts of an organ, (2) dimensions of the injury, (3) more detail on bone injuries, (4) physiological response to spinal cord and facial nerve injuries, and (5) a

special category describing hemopneumothorax. Both penetrating and blunt injuries are well delineated by the PEBL system. The letter "X" may be inserted anywhere to the right of the decimal point to indicate missing or unknown data. The PEBL code will facilitate estimation of mortalities and medical workloads to be expected from given injuries.

REFERENCES

1. H-ICDA. Hospital Adaptation of ICDA, Second Edition. Volume 1. Commission on Professional and Hospital Activities. PHS Publication No 1693. Ann Arbor, Michigan. 1973.

2. Baker, S. P. The Injury Severity Score: A Method for Describing Patients with Multiple Injuries and Evaluating Emergency Care. J. Trauma, *14*, 187. 1975.

3. The Abbreviated Injury Scale. Reprint from the Proceedings of the Eighteenth Conference of the American Association for Automotive Medicine.

4. Illinois Trauma Registry, Trauma Unit, Cook County Hospital, Research Resources Laboratory of the University of Illinois. January 1971.

5. College of American Pathologists, Committee on Nomenclature and Classification of Disease. College of American Pathologists, Chicago, Illinois. Sponsored by the American Cancer Society, Inc. and the American Medical Association. 1st Edition. 1965.

APPENDIX

THE PEBL ANATOMICAL INJURY CODES

OPEN WOUNDS OF BACK AND LIMBS

Codes

Apply to all of the following:

Y = 1 right
2 left
3 midline
0 unspecified

a = 1 skin
2 skin and subcutaneous tissue
3 skin, subcutaneous tissue, and partial-thickness muscle
4 skin, subcutaneous tissue, and full-thickness muscle (may also have abdominal, neurosurgical, or other damage)

b = 1 contusion ± hematoma
2 laceration (any size)
3 area defect 1/4 cm^2
4 area defect 1/4 – 1 cm^2
5 area defect 1 – 10 cm^2
6 area defect >10 cm^2

c = 1 joint capsule lacerated or torn
2 1 or more tendons lacerated or torn
3 No. 1 and No. 2
4 none of the above or not applicable

876.0 Open wound of back-lumbar region
876.0Yabc

877.0 Open wound of buttock
877.0Yabc

880.0 Open wound of shoulder and upper arm
880.0Yabc

881.0 Open wound of elbow, forearm, or wrist
881.0Yabc

882.0 Open wound of hand, except fingers alone
882.0Yabc

883.0 Open wound of fingers
883.0Yabc

885.0 Traumatic amputation of thumb
885.0Y

886.0 Traumatic amputation of other finger(s)
886.0Y

887.0 Traumatic amputation of arm or hand
887.0Y

890.0 Open wound of hip or thigh
890.0Yabc

891.0 Open wound of knee, lower leg, or ankle
891.0Yabc

892.0 Open wound of foot, except toe(s) alone
892.0Yabc

893.0 Open wound of toe(s)
893.0Yabc

895.0 Traumatic amputation of toe(s)
895.0Y

896.0 Traumatic amputation of foot
896.0Y

897.0 Traumatic amputation of leg
897.0Y

LIVER

864.Z Liver wounds

Z = 0 closed
1 open

864.Zabc

a = 1 "right lobe" = that part of right lobe 2 cm to right of true interlobar fissure, which extends from gallbladder bed to hepatic vein fossa
2 lateral segment of left lobe (left lobe lateral to falciform ligament)
3 "centrum" = medial segment of left lobe and medial part of true right lobe, excluded in No. 1

b = 1 (c = 0)
any incision, avulsion <2-cm deep

b = 2 penetrating incision (knife-like wound) of a = 1 or 2
c = 1 (bc = 21) <4 cm long
c = 2 (bc = 22) >4 cm long

b = 3 stellate, ragged, or burst injuries
c = 1 (bc = 31) <4 cm diameter and 2-4 cm deep
c = 2 <4 cm diameter and >4 cm deep
c = 3 >4 cm diameter and 2-4 cm deep
c = 4 >4 cm diameter and >4 cm deep

Note: (1) code wounds to different lobes separately, but only one code per lobe
(2) there is some internal redundancy in the coding

GALLBLADDER, BILE DUCTS, ADRENALS, PERITONEUM

868.Z Injuries to gallbladder, bile ducts, adrenals, peritoneum

Z = 0 closed
1 open

868.ZA

A = 1 gallbladder
2 bile ducts
3 adrenals
4 peritoneum

868.Z1 Gallbladder

868.Z1a — a = 1 contusion only
2 any laceration, tear or wound
3 avulsion with or without laceration or tear

868.Z2 Bile Ducts

868.Z2a — a = 1 any injury of hepatic duct(s)
2 any injury of common hepatic duct
3 any injury of cystic duct
4 any injury of common bile duct

868.Z3 Adrenals

868.Z3a — a = 1 any laceration, contusion, avulsion of right adrenal
2 any injury of left adrenal

868.Z4 Peritoneum

868.Z4a — a = 1 any disruption of parietal peritoneum, anterior or lateral
2 any disruption of posterior peritoneum (communication of retroperitoneal space and abdomen)

SPLEEN

865.Z Injury to Spleen — Z = 0 closed
1 open

865.Za — a = 1 contusion without hematoma
2 subcapsular hematoma, capsule intact
3 single fracture, laceration, or tear (any size)
4 multiple fractures, lacerations, or tears (any size)

EYE

870.0Y Open wound of eye and orbit (excluding injury to optic nerve, or other cranial nerves, and also excluding enucleation) — Y = 1 right
2 left
0 unspecified

870.0Ya — a = 1 globe, including conjunctiva, cornea, lens, ant. chamber, post chamber, retina, iris
2 eyelid – upper
3 eyelid – lower
4 lacrimal gland
5 nasolacrimal sac and duct
6 extraocular muscles

870.0Y1	Globe	
	870.0Y1b	b = 1 conjunctival abrasion or laceration, cornea not involved (including foreign body in eye) 2 corneal abrasion or laceration without perforation 3 any wound with perforation into antrum and/or posterior chambers, including rupture 4 retinal separation, vitreous hemorrhage, lens dislocation, or other disruption without perforation
870.0Y2	Eyelid – Upper	
870.0Y3	Eyelid – Lower	
	870.0Y2b 870.0Y3b	b = 1 any laceration not involving free margin 2 laceration or tear, does involve free margin 3 transection or avulsion of all or part of lid
870.0Y4	Lacrimal Gland	
	870.0Y4	any laceration or perforation
870.0Y5	Nasolacriminal sac +/or duct	any laceration or perforation
870.0Y6	Extraocular muscles	
	870.0Y6b	b = 1 laceration or perforation without severance of any muscles 2 one or more muscles severed
871.0	Enucleation of eye	
	871.0Y	Y = 1 right 2 left 0 unspecified
950.ZY	Injury to optic nerve	Z = 0 closed 1 open Y = 1 right 2 left 3 midline 0 unspecified
	950.ZYab	a = 1 optic nerve 2 decussation 3 optic tract b = 1 partial laceration 2 severed in transverse direction 3 severed in AP direction (will apply to decussation only) 0 not specified

HEAD AND FACE - SOFT TISSUE INJURIES

873.0 Scalp lacerations and avulsions

873.0a

a = 1 laceration, any size, not through galea
2 laceration through galea
3 area defect present, < 1/4 cm^2
4 area defect 1/4 - 1 cm^2
5 area defect 1 - 5 cm^2
6 area defect > 5 cm^2

873.0 Nose (soft tissue injuries)

873.0 abcde

a = 1 skin laceration, no skin loss (excludes columella)
2 skin loss < 1 cm^2 (excludes columella)
3 skin loss > 1 cm^2 (excludes columella)
0 not

b = 1 mucosal abrasion or laceration
2 not

c = 1 tear or laceration of one or both lateral cartilages, no cartilage loss
2 loss of either lateral cartilage, but < 1/3 on worst side
3 loss of > 1/3 of either lateral cartilage
0 none

d = 1 laceration of columella, no tissue loss
2 loss of all or part of columella (including avulsion)
0 no columella injury noted

e = 1 laceration of septal cartilage
2 loss of septal cartilage, but < 1/3
3 loss of > 1/3 septal cartilage
0 no septal cartilage injury

873.7Y Other facial injuries

Y = 1 right
2 left
0 unspecified or not applicable

873.7Ya

a = 1 forehead
2 eyebrow
3 upper lip
4 lower lip
5 tongue
6 other soft tissue, mouth
7 cheek
8 tooth
9 facial nerve

873.7Y1bc
873.7Y6bc
873.7Y7bcde

b = 1 skin or mucosa
2 skin or mucosa and subcutaneous tissue, no muscle
3 muscle involved, partial thickness
4 muscle involved, full thickness to underlying fascia, mucosa, or bone

c = 1 abrasion or contusion
2 laceration (any length)
3 area defect (by laceration, tearing, avulsion, or perforation) < 1/4 cm^2
4 area defect 1/4 - 1 cm^2
5 area defect 1-5 cm^2
6 area defect >5 cm^2

d = 1 parotid duct lacerated or torn but not severed
2 parotid duct severed
0 parotid duct not injured

e = 1 any parotid gland injury
0 no parotid gland injury

873.7Y8 Tooth — One or more fractures of teeth per se, not implying alveolar fracture

873.7Y9 Facial nerve
code under
951.ZY7 Facial nerve

EAR

872.0 Open wound of ear

Y = 1 right
2 left
0 unspecified

872.0Ya

a = 1 auricle
2 auditory canal
3 tympanic membrane (eardrum)
4 middle ear +/or inner ear

872.0Y1 Auricle
872.0Y1b

b = 1 abrasion +/or laceration not involving cartilage
2 tissue lost but < 1 cm^2
3 tissue loss > 1 cm^2, upper 1/3
4 tissue loss > 1 cm^2, middle 1/3
5 tissue loss > 1 cm^2, lobule
6 amputation involving No. 3 + No. 4, No. 4 + No. 5, or Nos. 3, 4, and 5.
7 tissue lost, location/amount unspecified

872.0Y2 Auditory canal
872.0Y2bc

b = 1 laceration with no fracture of bony canal (posterior superior mastoid part) or of tympanic plate (anterior and inferior part of canal)
2 fracture of bony canal (posterior/superior mastoid part)

3 fracture of tympanic plate (anterior and inferior canal)
4 No. 2 and No. 3
0 not specified

c = 1 one or more fractures displaced
2 no displacement
0 not specified or not applicable

872.0Y3 Tympanic membrane — any disruption

872.0Y4 Middle and inner ear structures (excluding tympanic membrane)

872.0Y4bcdef

b = 1 longitudinal fracture of petrous ridge
2 transverse fracture of petrous ridge
3 mixed (No. 1 and No. 2) fractures of petrous ridge
4 unqualifed fracture(s) of petrous ridge
0 no petrous ridge fractures, or not specified

c = 1 fracture of promontory of middle ear
0 not or unspecified

d = 1 partial or complete facial nerve injury in temporal bone
0 not or unspecified

e = 1 any disruption of middle or inner ear structures (including those in No. f below)
0 not or unspecified

f = 1 disruption of stapes from oval window
2 round window disruption
3 No. 1 and No. 2
0 none or unspecified

Note: (1) if temporal bone fracture is present usually code for basal skull fractures (801) as well.
(2) if facial nerve injury associated, code under CNS – facial nerve (951.ZY7), also.

THORACIC

861.Z Heart and lung

861.Z Heart

Z = 0 closed wound, heart
1 open wound, heart
2 closed wound, lung
3 open wound, lung

861.ZA

A = 1 pericardium and phrenic nerve
2 myocardium
3 coronary vasculature
4 valves
5 conducting system
6 hemopericardium

861.Z1ab Pericardium and phrenic nerves

a = 1 contusion
2 laceration, tear, perforation, penetration

b = 1 left phrenic nerve involved (any injury)
2 right phrenic nerve involved
3 no phrenic nerve damage (pericardium only)

861.Z2 "Myocardium"

861.Z2abc

a = 1 left ventricle
2 right ventricle
3 left atrium
4 right atrium
5 interatrial septum
6 interventricular septum

bc = 10 contusion, unspecified or not fitting other categories
11 contusion limited to epicardium
12 contusion of epicardium and myocardium only
13 contusion of myocardium only
14 contusion of myocardium and endocardium
15 contusion of endocardium only
16 contusion of all layers (epicardium, myocardium, endocardium)
19 contusion with rupture
20 laceration without perforation (any length or depth)
21 laceration with perforation of wall
31 partial-thickness wounds involving loss of tissue mass in addition to disruption (as in partially penetrating- or tangential bullet wound)
32 full-thickness wounds resulting in loss of tissue mass and communication of one chamber to another or to extracardiac space (perforating-bullet wounds, e.g.) – any diameter

861.Z3 Coronary vasculature

861.Z3ab

a = 1 right coronary artery
2 left main coronary artery
3 left anterior descending
4 left circumflex
5 other arterial
6 coronary sinus
7 other venous

b = 1 contusion – any
2 laceration, tear, perforation, puncture – any
0 unspecified

861.Z4 Valves

861.Z4ab

a = 1 aortic
2 pulmonary
3 mitral valve
4 mitral chordae
5 mitral papillary muscles
6 tricuspid valve
7 tricuspid chordae
8 tricuspid papillary muscles

b = 1 contusion (any)
2 severance across attachment of any leaflet or muscle by laceration or tearing (includes avulsion)
3 other lacerations, perforations

861.Z5 Conducting system

861.Z 5ab

a = 1 SA node
2 AV node
3 bundle of His and other major septal pathways

b = 1 contusion
2 severance or loss of tissue

861.Z6a Hemopericardium

a = 1 hemopericardium (>1 cm^3 blood) w/tamponade. (Physiologic classification based on such criteria as elevated CVP, equalization of artial pressures, decreased cardiac output, paradoxical pulse, electrical-mechanical dissociation, and electrocardiogram.)
2 without tamponade
3 tamponade unknown/unspecified

OTHER THORACIC (EXCLUDES HEART AND LUNG)

862.Z Injury to other and unspecified intrathoracic organs

Z = 0 closed
1 open

862.Za

a = 1 arteries
2 veins
3 thoracic duct
4 tracheobronchial tree
5 esophagus
6 diaphragm
7 nerves

862.Z1bcD

bc = 11 aorta, ascending only
12 aortic arch involved by injury
13 descending aorta only
20 innominate artery
21 left carotid
22 left subclavian

23 other branches of aorta, including internal mammaries, intercostals
31 main pulmonary artery
32 left pulmonary artery
33 right pulmonary artery
34 lobar artery(s)
35 segmental artery(s)

862.Z2bcD Thoracic veins

bc = 10 subclavian or innominate
20 superior vena cava
30 inferior vena cava
40 unspecified pulmonary veins
41 left superior
42 left inferior
43 right superior
44 right inferior
45 lobar veins
46 segmental veins
51 azygous vein +/or intercostal branch
52 hemiazygous vein +/or intercostal branches

862.Z3D Thoracic duct

D = injury codes:
D = 1 contusion (any size) without rupture
2 contusion (any size) with rupture
3 laceration or tear, external, partial thickness (any size)
4 laceration or tear, internal, partial thickness (any size) mostly intimal and medial aortic tears
5 full-thickness tear, laceration or perforation of wall, any size, but not transecting
6 2 full-thickness-tear, laceration, or perforations of apposing segments of vessel walls
7 severance or avulsion

862.Z4 Tracheobronchial tree
862.Z4bcd

bc = 10 trachea
11 trachea-posterior membranous
12 trachea-cartilaginous
20 bifurcation (carina)
30 left main stem bronchus
31 left bronchus-posterior membranous
32 left bronchus-cartilaginous
40 right main stem bronchus
41 right bronchus-posterior membranous
42 right bronchus-cartilaginous
50 lobar bronchi (one or more)
60 segmental bronchi (one or more)
70 others

d = 1 contusion (any size)
2 partial-thickness defect
3 any linear defect (laceration or tear), not transecting, but full-thickness
4 puncture or perforation, any size, excluding tears and lacerations
5 transection (any)

862.Z5 Esophagus (thoracic)

862.Z5b

b = 1 contusion or nonpenetrating laceration or tear
2 any full-thickness defect

862.Z6 Diaphragm

862.Z6bcde

b = 1 right
2 left
c = 1 central tendon involved
2 central tendon not involved
0 not specified
d = 1 esophageal hiatus involved
2 esophageal hiatus not involved
0 not specified
e = 1 contusion (any size)
2 linear or circular defect <1 cm in greatest diameter
3 linear defect 1-6-cm long (laceration, tear)
4 linear defect >6-cm long
5 circular or irregular defect with tissue loss up to maximum diameter of 4 cm
6 circular or irregular defect >4 cm in greatest diameter
7 avulsion – defect <5-cm long
8 avulsion – defect >5-cm long

862.Z6 Nerves

862.Z6bc

b = 1 right recurrent laryngeal
2 left recurrent laryngeal
3 right vagus
4 left vagus
5 right phrenic (not on pericardium)
6 left phrenic (not on pericardium)
c = 1 contusion or laceration (partial injury)
2 severance

PULMONARY

861.Z Lung (adults)

Note: If thoracic injuries are known in some detail, they should be coded under mediastinum vessels and tracheobronchial tree as well. This classification is relatively gross.

861.Zabc

Z = 2 closed
3 open

a = 1 right
2 left

b = 1 any penetrating or perforating disruption extending through the visceral pleura but <1 cm from chest wall (penetrating less than 1 cm deep into lung)
2 any penetration, perforation, or laceration with maximum penetration 1-7 cm
3 any penetration, perforation, or laceration with maximum penetration >7 cm
4 any contusion, blast, or burst <25 cm^2 in greatest projection (as measured on X-ray or at operation)
5 any contusion, blast, or burst >25 cm^2 and <100 cm^2
6 diffuse injury >100 cm^2)
7 any laceration or tear of parietal pleura only

c = 1 autopsy or operation performed but no tracheobronchial or vascular injuries
2 autopsy or operation performed – coded data on other injuries available
3 not done
0 not specified

860.Z Traumatic pneumothorax and hemothorax

860.Zab

a = 1 right
2 left

b = 1 pneumothorax (simple)
2 tension pneumothorax
3 hemothorax
4 hemopneumothorax

861.Z Thoracic wall injury

Z = 4 not open into chest
5 open into chest (penetrating parietal pleura)

861.ZYXabcdeFGH

Y = 1 right
2 left
0 not specified
X = 1 anterior
2 lateral
3 posterior
0 not specified
a = 1 skin and subcutaneous tissue
0 not
b = 1 overlying muscle
0 not
c = 1 intercostal muscles +/or ribs +/or cartilage
0 not
d = 1 intercostal artery
0 not
e = 1 breast
0 not
F = 1 contusion (any size)
0 none
G = 1 linear defect (tear, laceration), any size
0 none
H = 1 area defect (two-dimensional) <1/4 cm^2 (e.g., 1/2-cm-diameter bullet might make this)
2 area defect 1/3–1 cm^2 (e.g., 1-cm-diameter hole)
3 area defect 1-20 cm^2 (up to 5-cm diameter)
4 area defect >20 cm^2
0 none

Note: if ribs or ster um are fractured, should also code 807.

ORTHOPEDIC

Apply to all fractures (807.0 through 838.Z)

X = 1 punched out
2 linear ("simple")
3 comminuted
4 depressed
5 compressed
0 unspecified or not applicable

Y = 1 right
2 left
0 unspecified or not applicable

807.0 Fracture of rib(s), closed

807.0YXabc

a = 0 1 to 3 ribs on one side
1 more than 3 ribs on either side
b = 0 no flail
1 flail present
c = 0 rib No. 1 not fractured
1 rib No. 1 fractured

807.1 Fracture of rib(s), open

807.1YXabc

807.2 Fracture of sternum, closed

807.2YX

807.3 Fracture of sternum, open

807.3YX

810. Fracture of clavicle

810.ZYXabc

Z = 0 closed
1 open
a = 1 fracture
0 no fracture
b = 1 subluxation of sternoclavicular joint
2 dislocation of sternoclavicular joint
0 not involved
c = 1 subluxation of acromioclavicular joint
2 dislocation of acromioclavicular joint
0 joint not involved

811. Scapula

811.ZYXa

Z = 0 closed
1 open
a = 1 involves glenoid fossa
0 fossa not involved

812. Fracture of humerus

812.Z^1 upper end

812.Z^1YXab

Z^1= 0 closed
1 open
a = 1 head
0 head not involved
b = 1 neck
0 neck not involved

812.Z^2 Shaft

812.Z^2YX

Z^2= 2 closed
3 open

812.Z^3 lower end

812.Z^3YXabcde

Z^3= 4 closed
5 open
a = 1 supracondylar
0 not supracondylar

b = 1 trochlear (joint involved, not just epicondyl fracture)
0 not trochlear
c = 1 capitellum (not just epicondyle fracture)
0 not capitellum
d = 1 medial epicondyle (joint involved)
2 medial epicondyl (joint not involved)
0 medial epicondyle not involved
e = 1 lateral epicondyle (joint involved)
2 lateral epicondyle (joint not involved)
0 lateral epicondyle not involved

831. Dislocation of shoulder (humerus)
831.ZYXa
Z = 0 closed
1 open
a = 1 anterior
2 posterior
3 inferior
0 unspecified

813. Fracture of radius or ulna
813.Z*YXN Proximal radius
Z* = 0 closed
1 open
813.Z*YXNa
N = 1 radius
2 ulna
a = 1 head and/or neck (joint involved)
2 proximal 1/3, but not head or neck

813.Z*1 Shaft, radius (middle 1/3)
813.Z*YX1
Z* = 2 closed
3 open

813.Z*1 Rudius, distal 1/3
813.Z*YX1
Z* = 4 closed
5 open

813.Z*2 Ulna, proximal 1/3
Z* = 0 closed
1 open
813.Z*YX2abc
a = 1 olecranon
0 not olecranon
b = 1 coronoid process
0 not coronoid process
c = 1 joint not involved (i.e., neither "a" nor "b")
0 joint is involved (a and/or b = "1")

813.Z*2 Ulna, shaft (middle 1/3)
813.Z&YX2
Z* = 2 closed
3 open

813.Z*2 Ulna, distal 1/3
813.Z*YX2
Z* = 4 closed
5 open

832.Z*	Dislocations of elbow	Z*= 0 closed 1 open
	832.Z*YXab	a = 1 ulna 2 proximal radioulnar joint b = 1 anterior 2 posterior (X = 0)
814.Z	Fracture of carpal bones	Z = 0 closed 1 open
	814.ZYXabcd	a = 1 navicular (scaphoid) 0 not navicular b = 1 lunate 0 not lunate c = 1 capitate 0 not capitate d = 1 one or more triquetrum, pisiform trapezium (greater multangular), trapezoid (lesser multangular), hamate 0 none of these (X describes worst fracture)
833.Z	Dislocation(s) of wrist	Z = 0 closed 1 open
	833.ZYXabcd	a = 1 distal radioulnar joint 0 not radioulnar joint b = 1 radiocarpal and/or ulnar carpal 0 not radiocarpal c = 1 midcarpal 0 not midcarpal d = 1 carpometacarpal (proximal metacarpal) 0 not carpometacarpal Note: X = 0
815.Z	Fracture of metacarpal bone(s)	Z = 0 closed 1 open
	815.ZYXab	a = 1-5 (metacarpal number, thumb = 1, index = 2,...) b = 1 proximal joint involved 2 distal joint involved 3 proximal and distal joints involved 4 no joints involved
816.Z	Fracture of phalanges	Z = 0 closed 1 open
	816.ZYXabcd	a = 1-5 (number of fingers involved, thumb = 1, index = 2,...) b = 1 proximal phalanx, metacarpal phalangeal joint(s) only involved 2 proximal phalanx, proximal interphalangeal joint(s) only involved 3 proximal phalanx, metacarpal phalangeal and proximal interphalangeal joints involved

4 proximal phalanx, no joint(s)
0 no fracture

c = 1 middle phalanx, PIP joint only involved
2 middle phalanx, DIP joint only involved
3 middle phalanx, PIP and DIP joints involved
4 proximal, not joint
0 no fracture

d = 1 distal phalanx, with joint involved
2 distal phalanx, no joint involved
0 no fracture

817.Z Multiple fractures of hand bones, i.e., one or more fractures of at least one metacarpal and at least one phalanx (also coded under 815 and 816).

817.ZYX

Z = 0 closed
1 open

834.Z Dislocation of finger

834.ZYXab

Z = 0 closed
1 open

a = 1 thumb
2 index finger
3 finger No. 3
4 finger No. 4
5 finger No. 5

b = 1 metacarpal phalangeal joint
2 proximal interphalangeal joint
3 distal interphalangeal joint

(Note: X = O)

808.Z Fracture of pelvis

808.ZYXabcdefg

Z = 0 closed
1 open

a = 1 pubis
0 not pubis

b = 1 acetabulum
0 not acetabulum

c = 1 ischium
0 not ischium

d = 1 ilium
0 not ilium

e = 1 sacrum
0 not sacrum

f = 1 pubic separation
0 no separation

g = 1 sacroiliac joint separation
0 no separation

820.Z Fracture of femur, "neck"
Z = 0 closed
1 open

820.ZYXab
a = 1 head
0 not head
b = 1 neck – subcapital
2 neck – transcervical
3 neck – base
4 neck – one or more of 1–3 specified
5 neck – unspecified
6 not neck

820.Z Fracture of femur, trochanteric section
Z = 2 closed
3 open

820.ZYXa
a = 1 transverse (includes intertrochanteric, peritrochanteric, subtrochanteric)
2 other (greater or lesser trochanteric)

821.Z Fracture of femur, shaft
821.ZYX
Z = 0 closed
1 open

821.Z Fracture of femur, lower end
Z = 2 closed
3 open

821.ZYXa
a = 1 medial condyle fracture
2 lateral condyle fracture
3 bicondylar fracture
4 no joint involvement

822.Z Fracture of patella
922.XYX
Z = 0 closed
1 open

835.Z Dislocation of hip
Z = 0 closed
1 open

835.ZYXa
a = 1 anterior
2 posterior

836.Z "Dislocation" of knee (without fracture)
Z = 0 closed
1 open

836.ZYXabcdefghi
a = 1 medial collateral ligament tear
0 no medial collateral ligament tear
b = 1 lateral collateral ligament tear
0 no lateral collateral ligament tear
c = 1 anterior cruciate ligament tear
0 no anterior cruciate ligament tear
d = 1 posterior cruciate ligament tear
0 no posterior cruciate ligament tear
e = 1 medial meniscus tear
0 no medial meniscus tear
f = 1 lateral meniscus tear
0 no lateral meniscus tear
g = 1 patellar dislocation
0 no dislocation
h = 1 dislocation (except patellar)
0 no dislocation
i = 1 superior tibial fibular joint
0 not the superior tibial fibular joint

823.Z Fracture of tibia or fibula, proximal

823.ZYXN

Z = 0 closed
1 open
N = 1 tibia
2 fibula

823.ZYX1 Fracture proximal tibia

823.ZYX1abcd

a = 0 joint not involved
1 joint involved
b = 1 medial, depressed
2 medial, not depressed
0 neither
c = 1 tibial spine involved
0 tibial spine not involved
d = 1 lateral, depressed
2 lateral, not depressed
0 neither

823.ZYX2 Fracture proximal fibula

823.ZYX2a

a = 1 head and/or neck
0 not head or neck

823.ZXYN Fracture of shaft of tibia or fibula, not involving ankle

Z = 2 closed
3 open
N = 1 tibia
2 fibula

824.Z Fracture of ankle (excluding tarsal bones)

824.ZYXN

Z = 0 closed
1 open
N = 1 tibia
2 fibula

824.ZYX1 Fracture distal tibia involving ankle

824.ZYX1abcd

a = 1 medial malleolus
0 not medial malleolus
b = 1 posterior malleolus
0 not posterior malleolus
c = 1 lateral malleolus
0 not lateral malleolus
d = 1 epiphyseal separation
0 not epiphyseal separation

824.ZYX2 Fracture distal fibula involving ankle

824.ZYX2a

a = 1 lateral malleolus
0 not lateral malleolus

837.Z Dislocation of ankle

837.ZYXab

a = 1 inferior tibiofibular joint
0 not inferior tibiofibular joint
b = 1 tibiotalar
0 not tibiotalar

845.0 Ankle sprains and disruptions without dislocation

845.0YXab

a = 1 medial (deltoid) ligament
0 not medial (deltoid) ligament
b = 1 lateral ligament
0 not lateral ligament

825.Z Fractures of foot (including tarsal bones)

825.ZYXabcd

Z = 0 closed
1 open
ab = 11 talus – head
12 talus – neck
13 talus – body involving subtalar joint
14 talus – body not involving joint
15 talus – 2 or more of above
16 talus – not specified
17 calcaneus involving subtalar joint
18 calcaneus not involving subtalar joint
19 cuboid
20 navicular
21 medial cuneiform
22 middle cuneiform
23 lateral cuneiform
31 1st metatarsal
32 2nd metatarsal
33 3rd metatarsal
34 4th metatarsal
35 5th metatarsal
41 1st toe (any phalanx)
42 2nd toe
43 3rd toe
44 4th toe
45 5th toe
50 crush injury involving 5 or more tarsal and metatarsal bones
c = 1 proximal metatarsal
2 middle metatarsal
3 distal metatarsal
0 not applicable
d = 1 joint involved (toe or metatarsal bones)
0 joint not involved or not applicable

838.Z Dislocations of foot (including tarsal bones) without fracture

Z = 0 closed
1 open

838.ZYXab

ab = 11 subtalar (calcaneotalar)
12 calcaneus (excluding subtalar)
13 cuboid
14 navicular
15 medial cuneiform
16 middle cuneiform
17 lateral cuneiform
31 tarsal – metatarsal No. 1
32 tarsal – metatarsal No. 2
33 tarsal – metatarsal No. 3
34 tarsal – metatarsal No. 4
35 tarsal – metatarsal No. 5
41 metatarsal phalangeal joint No. 1
42 metatarsal phalangeal joint No. 2
43 metatarsal phalangeal joint No. 3
44 metatarsal phalangeal joint No. 4
45 metatarsal phalangeal joint No. 5
51 proximal interphalangeal joint No. 1
52 proximal interphalangeal joint No. 2
53 proximal interphalangeal joint No. 3
54 proximal interphalangeal joint No. 4
55 proximal interphalangeal joint No. 5
62 distal interphalangeal joint No. 2
63 distal interphalangeal joint No. 3
64 distal interphalangeal joint No. 4
65 distal interphalangeal joint No. 5

FACIAL FRACTURES

Apply to all fractures

X = 1 punched out
2 linear
3 comminuted
W = 1 displaced
0 not displaced
Y = 1 right
2 left
3 bilateral
0 unspecified or not applicable

802.Z Nasal bones

Z = 0 closed
1 open

802.ZYXWa

a = 1 associated with frontal-ethmoidal fracture
0 not associated or unspecified

802.Z Mandible

Z = 2 closed
3 open

802.ZYXWabcdefghij

a = 1 symphysis
0 not
b = 1 parasymphysis
0 not
c = 1 body
0 not
d = 1 angle
0 not

e = 1 ramus
0 not
f = 1 condyle (including subcondylar)
0 not
g = 1 alveolar
0 not
h = 1 segmental bone loss > 1 cm
0 not
i = 1 1 or more teeth lost
0 no teeth lost
j = 1 airway obstructed because of fractures
0 not

802.Z Other facial fractures — Z = 4 closed, 5 open

802.ZYXWa — a = 1 frontal, 2 orbit, 3 zygoma, 4 maxilla, 5 others (including ethmoids)

802.ZYXW1 Frontal

802.ZYXW1b — b = 1 anterior wall, 2 anterior and posterior walls (code under 800. for skull fractures, also)

802.ZYXW2 Orbit

802.ZYXW2b — b = 1 supraorbital rim, 2 medial wall, ethmoid sinus, 3 lateral wall, 4 orbital floor

802.ZYXW3 Zygoma

802.ZYXW3bcd
b = 1 arch
0 not
c = 1 zygomatic frontal suture and/or zygomaxillary suture
0 not
d = 1 central malar fracture
0 not
(c = d = 1 for trimalar fractures)

802.ZYXW4 Maxilla and middle face fractures

802.ZYXW4a — a = 1 transverse LeForte I (fractured segment contains upper teeth, palate, lower portions of pterygoid processes, and portion of wall of each maxillary sinus)

2 LeForte II (pyramidal) (fractured segment contains all in No. 1 and also nasal bones and frontal processes of maxillae)
3 LeForte III (craniofacial dysjunction) (maxillae, nasal bones, and zygomatic compound separated as a unit from cranial attachments)
4 multiple unnamed fractures of midface
0 none of these

b = 1 sagittal maxillary fracture over sinus
2 hard palate fracture
3 both No. 1 and No. 2
0 none

c = 1 maxillary alveolar fracture with no loss of teeth
2 maxillary alveolar fracture with loss of one or more teeth
0 not

802.ZYXW5 Other midface fractures, not codable elsewhere

NECK

874.0 Open wound of neck (deep structures) (excluding larynx, trachea, and vascular)

874.0Yabc

Y = 1 right
2 left
3 midline
0 unspecified or not applicable

a = 1 pharynx
2 cervical esophagus
3 minor salivary glands
4 thyroid gland
5 vagus nerve
6 phrenic nerve
7 recurrent laryngeal
8 superior laryngeal
9 other nerves (any)

b = 1 contusion
2 partial thickness laceration or tear
3 full-thickness laceration or tear, not severed
4 severed

c = 1 area defect (from laceration, penetration, or perforation) $<1/4$ cm^2
2 area defect $1/4 - 1$ cm^2
3 area defect $1 - 5$ cm^2
4 area defect >5 cm^2
0 not applicable

875.0 Superficial wound of neck

875.0ab

a = 1 skin
2 skin, subcutaneous tissue, and platysma
3 skin, subcutaneous tissue, platysma, and partial thickness of underlying muscle
4 skin, subcutaneous tissue, platysma, and full thickness of underlying muscle (needs coding of injured structures below muscle, if any)

b = 1 contusion ± hematoma
2 laceration (any length)
3 area defect (from lacerations, tears, or perforations) $< 1/4$ cm^2
4 area defect $1/4 - 1$ cm^2
5 area defect $1 - 5$ cm^2
6 area defect > 5 cm^2

ENT – LARYNX

807.Z "Fracture" larynx and cervical trachea

Z = 4 closed
5 open

Note: Virtually all laryngeal injuries, whether caused by knife, bullet, or fist, are fractures, so all injuries will be classified here.

807.Zabcdefgh

a = 1 epiglottis
2 hyoid bone
3 arytenoid cartilage
4 thyroid cartilage
5 cricoid cartilage
6 false cords
7 true cords
8 trachea
0 unspecified

b = 1 supraglottic
2 glottic (superior margin of true cords to 5 mm below them)
3 subglottic
4 transglottic
0 unspecified or not applicable

c = 1 linear fracture – aligned
2 linear fracture – depressed
3 multiple or comminuted "fracture" – tissue loss < 1 cm^2
4 multiple or comminuted "fracture" – tissue loss > 1 cm^2
0 no fracture

d = 1 dislocation – cricoarytenoid, right or left (unilateral)
2 dislocation – cricoarytenoid, bilateral
3 dislocation – cricothyroid

4 presence of 1 and 3 or 2 and 3
0 no dislocation

e = (applies to epiglottis, true and false cords)
1 laceration (without transection or avulsion)
2 transection or avulsion
0 no laceration or not applicable

f = (applies to trachea only)
1 contusion (external)
2 nonperforating laceration
3 laceration/perforation without transection (tissue loss < 1 cm^2)
4 laceration/perforation without transection (tissue loss > 1 cm^2)
5 transection (tissue loss < 1 cm^2)
6 transection (tissue loss > 1 cm^2)
0 no laceration perforation, or not applicable

g = 1 mucosal laceration or tear only
2 mucosal hematoma
3 mucosal edema
4 normal mucosa
0 not specified

h = 1 vocal cord movement normal
2 vocal cord paralysis or paresis (unilateral)
3 vocal cord paralysis or paresis (bilateral)
0 unspecified or not observed

NEUROSURGERY

Skull fractures

800.Z Fractures of vault — Z = 0 closed, 1 open

800.Za — a = 1 linear only, 2 depressed, 3 penetrating <2-cm diameter, 4 penetrating >2-cm diameter

Decapitation

898.00 Decapitation

801.Z Fractures of base of skull (specific bones unimportant) — Z = 0 closed, 1 open (CSF leak or pneumocephalus)

801.Zab — a = 1 petrous ridge fractured (code under EAR, 872.0Y4, also), 0 not or unknown; b = 1 frontal/ethmoid fracture (code under FACIAL FRACTURES, 802., also, if appropriate), 0 not or unknown

Spinal column fractures/dislocations

80A Fracture and fracture dislocation with/without spinal cord lesion at that site

A = 5 without spinal cord injury
6 with injury

80A.Z Cervical
Z = 0 closed
1 open

80A.Z Thoracic
Z = 2 closed
3 open

80A.Z Lumbar
Z = 4 closed
5 open

80A.Z Sacral (to S-4)
Z = 6 closed
7 open

General code:

80A.Zabcd

a = 1 C1 – C4
2 C5 – T1
3 unspecified neck
4 T2 – S4

b = 1 single fracture
2 2 or more fractures
3 unspecified
4 no fracture (misalignment only)

c = 1 worst fracture is stable:
transverse process
spinous process
anterior avulsion
puncture
wedge compression of body
2 unstable – facet joints +/or pedicles
3 unstable – arch of C1
4 unstable – odontoid process
5 unstable – comminuted fracture of a body
6 unstable – more than one of No. 2–6 or unspecified
0 not specified as stable or unstable

d = 1 aligned
2 subluxation = <1/2 body width displaced
3 dislocated = >1/2 body width displaced
0 not specified as aligned or not

Note: Redundancy in "a" is recognized.

CNS injuries – brain

851.Z Cerebral laceration and contusion

Z = 0 closed
1 open

851.ZAabc

A = 1 cerebrum

a = 1 right
2 left
3 bilateral
0 unspecified
b = 1 frontal area
2 temporal area
3 temporoparietal area
4 occipital area
5 2 or more areas, or bilateral
0 unspecified
c = 1 worst lesion is contusion
2 worst penetration or laceration is deficit of < 1.5 cm in greatest dimension
3 worst lesion has deficit of > 1.5 cm in greatest dimension

851.Z2abc — A = 2 cerebellum – any contusion, laceration or crush

851.Z3abc — A = 3 brain stem

(a=b=c=0)

852.Z Subdural or epidural hematoma

Z = 0 closed
1 open (very unusual)

852.Zab

a = 1 right
2 left
3 side not specified
b = 1 epidural hematoma
2 acute subdural with cerebral injury (contusion) in same site
3 acute subdural without cerebral injury
4 acute subdural – cerebral injury not specified

853.2 Traumatic intracerebral hematoma (no penetrating wound tract)

853.2a

a = 1 one or more, largest < 1.5 cm in greatest diameter
2 one or more, largest > 1.5 cm in greatest diameter

853.5 Cerebral edema (as an isolated event)

853.5abc

a = 1 general (b=c=0)
2 local
b = 1 right
2 left
c = 1 frontal lobe
2 temporal lobe

CNS injuries – Spinal cord

958.8Zab Spinal cord "unspecified site"

Z = 0 closed
1 open
a = 1 C1 – C4
2 C5 – T1
3 T2 – L2
4 cauda equina
0 unspecified site
b = 1 crush or transection
2 contusion or laceration with some function
3 contusion or laceration with no function
4 contusion or laceration – function unspecified
0 nature of injury unspecified

Peripheral nerve injuries

Z = 0 closed
1 open
Y = 1 right
2 left

952.Z Nerve injury, upper arm

952.ZYab

953.ZYab Nerve injury, forearm

954.ZYab Nerve injury, wrist and hand

a = 1 brachial plexus
2 median nerve
3 radial nerve
4 ulnar nerve
5 axillary nerve
6 musculocutaneous nerve
b = 1 partial laceration
2 total severance
3 contusion only

955.ZY Nerve injury, upper leg (thigh)

955.ZYab

a = 1 sciatic nerve
2 femoral nerve
b = 1 partial laceration
2 total severance
3 contusion only

956.ZY Nerve injury, lower leg

956.ZYab

a = 1 peroneal
2 tibial
3 popliteal
b = 1 partial laceration
2 total severance
3 contusion only

Facial nerve injuries

951.ZY7 Facial nerve

951.ZY7abcd

a = 1 intracranial (intratemporal) – intracanalicular
2 intratemporal -- intratympanic (horizontal)
3 intratemporal – mastoid portion (vertical)
4 intratemporal – location unknown or unspecified
5 extracranial
0 location unspecified

b = 1 trunk
2 temporal–zygomatic branches
3 buccal branch
4 marginal mandibular branches
5 one or all of No.2–4 but not trunk injury
0 unspecified

c = 1 partial injury to specified structure
2 complete injury (usually severance)
0 not specified

d = 1 dysfunction onset immediate from time of injury (<1 minute)
2 dysfunction delayed (>1 minute)
0 unspecified

GI TRACT (ABDOMEN)

863.Z GI tract

863.Zab

Z = 0 closed
1 open

ab = 10 esophagus
20 stomach
31-5 duodenum (4 parts) and ampulla
41 jejunum
42 ileum
51 appendix
52 cecum
53 ascending colon
54 transverse colon
55 descending colon
56 sigmoid colon (above peritoneal reflection)
60 sigmoid colon and rectum (below peritoneal reflection)
70 anus
80 pancreas

863.Z10 Esophagus (abdominal)

863.Z10c

c = 1 contusion or nonpenetrating tear or cut
2 any perforation not involving gastroesophageal junction
3 any perforation involving gastroesophageal junction

DEFINITIONS FOR GI INJURIES:

I. Maceration = disruption of tissue in diffuse manner so that diminution of tissue resistance to shearing or tearing forces results, and grossly evident by friability, decrease in tissue volume without tissue loss (crush), +/or loss of prior tissue structure. (Includes PULPEFACTION, FRAGMENTATION, and DISINTEGRATION)

II. Perforation = actual loss of tissue with well defined margins (includes bullet wounds, eg.).

III. Laceration = full thickness cut or tear.

IV. Area of tissue loss = union or sum of surface areas of perforations and/or macerations which are contiguous.

V. Normal tissue at risk =

1. If two lacerations are within 2 cm of each other, make an imaginary square which barely includes all those points of each line (laceration) that are within 2 cm of some point of the other line (laceration). The tissue in that area is an area of normal tissue at risk.

2. If a laceration is within 2 cm of an area of tissue loss, the smallest square which includes all those points along the line (laceration) also defines an area of tissue at risk.

3. If two areas of tissue loss are within 2 cm of each other, the smallest square containing all those points in each area that are within 2 cm of any points in the other area defines another area of tissue at risk.

VI. Area of real tissue loss = any single area formed by joining all contiguous areas of tissue loss and areas of tissue at risk.

863.Z20c Stomach

Z = 0 closed
1 open

863.Z20c

c = 1 1 or more contusions or serosal tears, no tissue loss
2 1 or more lacerations or tears, no real tissue loss
3 1–2 areas of real tissue loss, each $<4\ cm^2$, ± lacerations
4 3–6 areas of real tissue loss, each $<4\ cm^2$, ± lacerations
5 1–6 areas of real tissue loss, at least one $4–25\ cm^2$, total loss $<100\ cm^2$, ± lacerations
6 >7 areas of real tissue loss, none $>25\ cm^2$, total $<100\ cm^2$
7 at least one area of real tissue loss $25–64\ cm^2$, total loss $<100\ cm^2$
8 largest single area of loss $>64\ cm^2$ or total $>100\ cm^2$

863.Z3x Duodenum

863.Z3xcd

Z = 0 closed
1 open

x = 1 1st (superior) part
2 2nd (descending) part
3 3rd (horizontal) part
4 4th (ascending) part
5 ampulla
6 more than one part (and some or all are not coded separately)
0 location not specified

c = 1 contusion +/or serosal tear
2 laceration or tear <1 cm, no real tissue loss
3 laceration or tear >1 cm, no real tissue loss
4 real tissue loss present, but <1 cm^2
5 real tissue loss 1-4 cm^2
6 real tissue loss >4 cm^2
7 intramural hematoma only
0 unspecified

d = 1 posterior peritoneum lacerated or torn
2 posterior peritoneum intact
0 unspecified

863.ZAB Jejunum, ileum, ..., anus

863.ZABc

AB = 41, 42, 51, 52, 53, 54, 55, 56, 60, 70

c = 1 1 or more contusions +/or serosal tears, no tissue loss
2 1 or more perforating lacerations or tears, no real tissue loss
3 1-2 areas of real tissue loss, each <1 cm^2, ± lacerations
4 >3 areas of real tissue loss, all < 1 cm^2, ± lacerations
5 1 or more areas of real tissue loss >1 cm^2, total <25 cm^2, ± lacerations
6 1 or more areas of real tissue loss > 1 cm^2, total > 25 cm^2

863.Z80 Pancreas

863.Z80ab

a = 1 head
2 body
3 tail
4 head and body
5 body and tail
6 head, body, and tail

b = 1 contusion
2 laceration, penetration, or maceration not involving duct
3 duct partially severed
4 duct severed
0 unspecified

ABDOMINAL WALL AND PERINEUM

879.0 Open wound of trunk (excludes thorax, breast, back, buttock, sacroiliac region, scapular region)

879.0abc

a = 1 abdominal wall – right upper quadrant
2 abdominal wall – left upper quadrant
3 abdominal wall – right lower quadrant
4 abdominal wall – left lower quadrant
5 abdominal wall – epigastrium
6 abdominal wall – right flank
7 abdominal wall – left flank
8 abdominal wall – unspecified
9 perineum

b = 1 skin
2 skin and subcutaneous tissue
3 skin, subcutaneous tissue, and partial-thickness muscle
4 skin, subcutaneous tissue, and full-thickness muscle (requires coding peritoneum (868.Z4) if it is injured)

c = 1 contusion ± hematoma
2 laceration (any size)
3 area defect $< 1/4$ cm^2
4 area defect 1/4-1 cm^2
5 area defect 1-10 cm^2
6 area defect > 10 cm^2

879.0046 Evisceration

GENITO-URINARY

866.ZY Injury to kidney

Z = 0 closed
1 open

Y = 1 right
2 left
0 not specified

866.ZYa

a = 1 contusions/subcapsular hematomas, any size
2 cortical laceration from capsule, not extending to pelvis, ± capsule laceration
3 cortical laceration extending to pelvis, but not to capsule (capsule intact)
4 transcortical–transcapsular laceration
5 fracture = multiple transcortical-transcapsular lacerations

6 any pedicle injury (pedicle–artery, vein, and pelvis) (may need vascular coding 995.3Y3Bcd)

Note: (1) "cortical" means parenchymal, and does not describe the renal cortex as opposed to the renal medulla
(2) a laceration is any incision, perforation, or tear

PELVIC ORGANS

867.Z Injury to pelvic organs

Z = 0 closed
1 open

867.Zab

ab = 11 right ureter
12 left ureter
13 bladder
14 urethra (includes membranous and bulbous in male)
20 prostate and seminal vesicles
30 vas deferens
41 right ovary
42 left ovary
51 right fallopian tube
52 left fallopian tube
61 uterus – body
62 uterus – cervix

867.Z1Y Ureter

Y = 1 right
2 left

867.Z1Yc

c = 1 partial laceration without transection
2 transection – no segment loss
3 transection or avulsion with segmental tissue loss

867.Z13 Bladder

867.Z13c

c = 1 contusion – any muscular injury, including lacerations, usually with hematoma, but not involving mucosa
2 perforating injury, peritoneum intact (includes ruptures, lacerations, bullet wounds)
3 perforating injury, peritoneum opened with communication into abdomen

867.Z14 Urethra

867.Z14c

c = 1 partial laceration
2 transection

867.Z20 Prostate and seminal vesicles – any injury

867.Z30 Vas deferens

867.Z30Yc
- Y = 1 right
- 2 left
- c = 1 partial laceration
- 2 transection

867.Z4Y Ovaries
- Y = 1 right
- 2 left
- 0 unspecified

867.Z4Yc
- c = 1 laceration or tear, <3/4 thickness
- 2 laceration or tear, >3/4 thickness
- 3 avulsion and/or crush of entire organ

867.Z5Y Fallopian tube
- Y = 1 right
- 2 left
- 0 unspecified

867.Z5Yc
- c = 1 laceration or tear into lumen, not transected
- 2 transection or avulsion from uterus

867.Z61 Uterus – body

867.Z61c
- c = 1 laceration or tear without perforation of wall
- 2 perforating laceration or tear,any size

867.Z62 Uterus – cervix

867.Z62c
- c = 1 laceration or tear not involving canal
- 2 laceration, tear, or perforation involving canal

878.0 Open wound of (external) genital organs including traumatic amputation

878.0a
- a = 1 penis
- 2 scrotum
- 3 testis
- 4 vulva
- 5 vagina

878.01 Penis

878.01b
- b = 1 contusion
- 2 any laceration or perforation not involving urethra

3 urethra lacerated or transected but <3/4 of cross-sectional area separated
4 >3/4 cross-sectional area lacerated (amputation)

878.02 Scrotum

878.02b

b = 1 contusion
2 laceration(s)
3 avulsion = laceration or tear with >3/4 skin loss

878.03 Testis

878.03Yc

Y = 1 right
2 left
0 not specified

c = 1 contusion
2 any laceration, penetration, rupture
3 avulsion = severance from spermatic cord

878.04 Vulva

878.04a

a = 1 lacerations, tears, penetrations not involving urethra
2 urethra involved
0 not specified with respect to urethral involvement

878.05 Vagina

878.05a

a = 1 lacerations, tears not perforating vaginal wall
2 vaginal wall perforated
0 not specified with respect to perforation

VASCULAR (EXTRACRANIAL AND EXTRATHORACIC)

995.3YAB Traumatic aneurysm and arterial injury (excluding intracranial and thoracic)

Y = 1 right
2 left
0 unspecified or not applicable

A = 1 head and neck
2 upper extremity
3 abdomen
4 lower extremity

B = 1 arterial
2 arterial with some associated venous injury
3 venous

4 venous with some associated arterial injury

995.3YABcd

c = (will designate vessel)
d = 1 contusion without perforation or tear
2 internal/medial tear
3 adventitial/medial tear or laceration
4 perforation, partial laceration or tear (vessel open but not transected)
5 transection
6 aneurysm
0 unspecified

VASCULAR – HEAD AND NECK

995.3Y11cd Head and neck – arterial injuries

995.3Y12cd

c = 1 subclavian artery
2 common carotid artery
3 internal carotid artery
4 external carotid artery
5 vertebral artery
6 other arteries of head and neck (including thyrocervical trunk and all branches of external carotid)

995.3Y13cd Head and neck – venous injuries

995.3Y14cd

c = 1 internal jugular vein
2 subclavian vein
3 others

VASCULAR – UPPER EXTREMITY

995.3Y21cd Upper extremity – arterial injuries

995.3Y22cd

c = 1 axillary artery
2 brachial artery
3 ulnar artery
4 radial artery
5 other arteries
0 unspecified

995.3Y23cd Upper extremity – venous injuries

995.3Y24cd

c = 1 axillary vein
2 brachial vein
3 other veins
4 not specified

VASCULAR – ABDOMEN

995.3Y31cd Abdomen – arterial injuries

995.3Y32cd

c = 1 aorta – location unspecified
2 aorta – proximal to renals
3 aorta – distal to renals
4 splenic artery
5 celiac axis arteries (excluding splenic)
6 mesenteries (superior and inferior)
7 renal artery (also under renal pedicle)
8 common iliacs and branches
9 others (including suprarenals, lumbars, mesenteric arcades, ovarian, omental)
0 unspecified

995.3Y33cd Abdomen – venous injuries

995.3Y34cd

c = 1 inferior vena cava – infrarenal
2 inferior vena cava – suprarenal
3 inferior vena cava – intrahepatic
4 renal vein (also under renal pedicle)
5 splenic vein
6 portal vein
7 mesenteric veins (superior and inferior)
8 iliac veins
9 others
0 unspecified

VASCULAR – LOWER EXTREMITY

995.3Y41cd Lower extremity – arterial injuries

995.3Y42cd

c = 1 femoral – common
2 femoral – deep
3 femoral – superficial
4 popliteal
5 anterior tibial
6 posterior tibial
7 peroneal
8 others
0 unspecified

995.3Y43cd Lower extremity – venous injuries

995.3Y44cd

c = 1 femoral vein
2 popliteal vein
3 others

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