



UNITED STATES
 CONSUMER PRODUCT SAFETY COMMISSION
 WASHINGTON, DC 20207

Memorandum

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TO : N.J. Scheers, Ph.D., Director
 Office of Planning and Evaluation

THROUGH : Susan W. Ahmed, Ph.D., AED *SA*
 Directorate for Epidemiology

Russell H. Roegner, Ph.D., Director *TRC*
 Division of Hazard Analysis

FROM : Linda M. Hooper, Health Statistician *lmh*
 Division of Hazard Analysis

SUBJECT : Head Injury-Related Deaths to Children Under 15 Years Old, Calendar Years, 1991-2000

This memorandum presents head injury-related deaths¹ to children under 15 years of age in the United States for the calendar years 1991 through 2000.

Based on data from the National Center for Health Statistics (NCHS), the total number of deaths related to head injuries to children under 15 years in the U.S. showed a marginally significant decrease ($p=0.068$) of 17 deaths per year between 1991 and 2000. The estimated head injury deaths to children under 15 related to consumer products² showed a small but marginally significant decrease ($p=0.077$) of 4 deaths per year during this 10-year period. For children under 15, head-injury deaths related to consumer products accounted for about 13 percent of the total number of head injury deaths each year. The population-based rates of head injury deaths per million children indicated small but statistically significant decreases of 0.5 per year ($p=0.005$) for the total number of deaths and of 0.1 per year ($p=0.013$) for consumer product-related deaths (see Table 1 and Figures 1-2).

Table 2 shows a breakdown of consumer product-related head injury deaths into (1) deaths related to bicycles and (2) deaths related to other: off-road motor vehicles such as snowmobiles, go-carts, or ATVs; falls from one level to another such as stairs/steps, windows, beds/chairs, playground equipment, or building structure; falls from same level (as in sports or in recreational activities) such as skiing, roller blading, ice skating, etc.; cutting or piercing instruments such as lawn mowers, power tools, or machinery; explosions such as fireworks, aerosol cans, or pressure cookers; and injury by other unspecified or unknown if accidental. During this 10-year period, head injury-related deaths associated with bicycles showed a small but statistically significant decrease of 4 deaths per year ($p=0.006$). The population-based rate of deaths per 1 million children associated with bicycles indicated a small but statistically significant decrease of 0.1 deaths per year ($p=0.002$) during the same period.

¹ Deaths as the result of head injuries and no other causes.

² *Estimates of Consumer Product Related Deaths, 1984-1998* (Updated and Revised, October 2001), Ault Kimberly, Ph.D., U.S. CPSC, Directorate for Epidemiology, Division of Hazard and Injury Data Systems

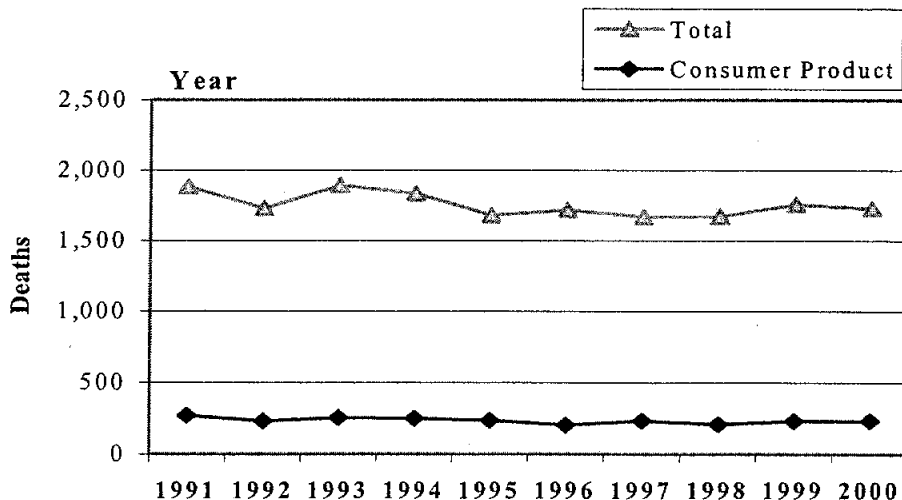
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 CPSC's (B)(1) Clearance *AB*
 No. Mfrs/PrvtLbrs of
 Products Identified
 Excepted by _____
 Firms Notified,
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Table 1. Total and Consumer Product-Related Rates of Head Injury Deaths To Children Under 15 Years Old, 1991-2000

Year ³	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Head Injury-Related Deaths	1883	1730	1893	1835	1680	1719	1672	1673	1757	1730
Population Based Rates / Million	34.2	31.0	33.4	32.1	29.2	29.8	28.9	28.8	30.1	28.7
Consumer Product-Related Head Injury Deaths⁴	271	232	254	250	236	206	235	209	233	235
Population Based Rates / Million	4.9	4.2	4.5	4.4	4.1	3.6	4.1	3.6	4.0	3.9

Sources: (1) National Center for Health Statistics: ICD-9 and ICD-10.
 (2) Population Estimates Program, Population Division, U.S. Census Bureau, Washington D.C., Internet Release Dates: January 13, 2000, January 2, 2001, and January 21, 2003.
 (3) U.S. CPSC, Directorate for Epidemiology: Division of Hazard Analysis and Division of Hazard and Injury Data Systems.

Figure 1. Total Number of Head Injury Deaths and Consumer Product-Related Head Injury Deaths to Children Under 15 Years, 1991-2000

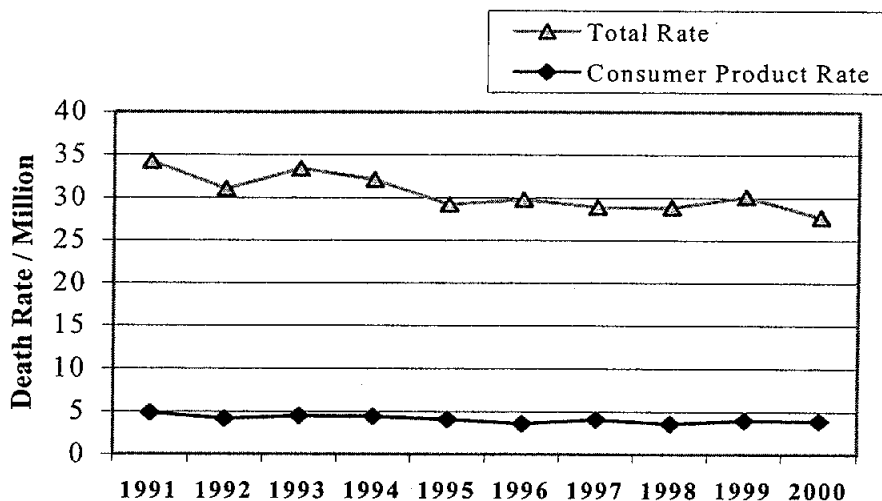


Sources: National Center for Health Statistics (NCHS) and U.S. Consumer Product Safety Commission CPSC), Directorate for Epidemiology, Division of Hazard Analysis and Division of Hazard and Injury Data Systems.

³ Comparability ratio = 1 between ICD-10 codes (1999) and ICD-9 codes (1991-1998).

⁴ *Estimates of Consumer Product Related Deaths, 1984-1998* (Updated and Revised, October 2001), Ault, Kimberly, Ph.D., U.S. CPSC, Directorate for Epidemiology, Division of Hazard and Injury Data Systems.

Figure 2. Head Injury Death Rates and Consumer Product-Related Head Injury Death Rates to Children Under 15 Years, 1991-2000



Sources: National Center for Health Statistics (NCHS), U.S. Census Bureau, and U.S. Consumer Product Safety Commission, Directorate for Epidemiology: Division of Hazard Analysis and Division of Hazard and Injury Data Systems.

Table 2. Consumer Product-Related Head Injury Deaths To Children Under 15 Years Old, 1991-2000

Year	Bicycle		Other		Total Deaths
	Deaths	Rate/Million	Deaths	Rate/Million	
1991	112	2.0	159	2.9	271
1992	107	1.9	125	2.2	232
1993	123	2.2	131	2.3	254
1994	120	2.1	130	2.3	250
1995	110	1.9	126	2.2	236
1996	87	1.5	119	2.1	206
1997	103	1.8	132	2.3	235
1998	81	1.4	128	2.2	209
1999	83	1.4	150	2.7	233
2000	87	1.4	148	2.5	235
Total	1,013		1,348		2,361

Sources: National Center for Health Statistics (NCHS), U.S. Census Bureau, and U.S. Consumer Product Safety Commission, Directorate for Epidemiology: Division of Hazard Analysis and Division of Hazard and Injury Data Systems.

Methodology

All death certificates filed in the U.S. are compiled by the National Center for Health Statistics (NCHS) into multiple cause mortality data files. The mortality data files contain demographic information as well as the International Classification of Disease codes for the underlying cause of death and up to 20 contributing conditions. The data are compiled in accordance with the World Health Organization (WHO) instructions, which request that member nations classify causes of death by the current Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. The International Classification of Diseases (ICD), Ninth Revision was implemented in 1979 and was in effect between 1979 and 1998. The ICD has been revised approximately every 10 years since 1900. The purpose of the revision is to stay abreast of medical advances. The introduction of the Tenth Revision of ICD (ICD-10) in mortality statistics for selected causes of death was implemented in 1999. This report on head injury-related deaths to children under 15 years old was based on the Ninth and Tenth Revisions of the International Classification of Diseases for the years 1991-1998 and 1999-2000, respectively.

ICD-10 differs from ICD-9 in several respects. ICD-10 is far more detailed than ICD-9, with about 8,000 categories compared with about 5,000 categories; ICD-10 uses alphanumeric codes compared with numeric codes in ICD-9. The introduction of a new revision of the ICD can create discontinuities in trend data. The extent of this discontinuity can be measured using a comparability ratio, which is computed through a double coding of a large sample of the national mortality file, once by the old version (ICD-9) and again by the new version (ICD-10). The results can be expressed as a ratio of the number of deaths for a cause of death by the later revision divided by the number of that cause of death coded and classified by the earlier version. A comparability ratio less than "one" represents fewer deaths being classified to a hazard group under ICD-10 compared to the hazard group under ICD-9. A comparability ratio greater than "one" represents a larger number of deaths being classified to a hazard group under ICD-10. The comparability ratio used in this memo is one because the comparability ratios were one or very near one with the exception of a few categories, such as (1) cut/pierce, (2) hot object/scald, (3) machinery, and (4) natural/environmental⁵. For the 2002 head injury-related deaths, these categories account for a very small portion of head injury-related deaths (only 2 cases). The discontinuities in cause-of-death statistics resulting from these classification and rule changes are critical when the interpretation of mortality trends is needed.

The following steps are used to determine the number of head injury-related deaths (where head injury was determined to be the cause of death in the presence or absence of other cited injuries) to children associated with the use of consumer products from 1991 through 2000:

⁵ Preliminary Comparability Ratios Between the 9th and 10th Revisions of the International Classification of Diseases, Ault, Kimberly, Ph.D., U.S. CPSC, Directorate for Epidemiology, Division of Hazard and Injury Data Systems, November 2001.

1. Search the NCHS data for head injury-related deaths⁶ with the injury codes (N codes):

1991-1998

<u>NCODE</u>	<u>Contributing Cause of Death</u>
800.0-804.9	Fracture of Skull
850.0-854.9	Intracranial injury (excluded skull fracture)
873.0-873.1	Open wound to head
905.0	Late effect of fracture of skull & face bones
907.0	Late effect of intracranial injury (excluded skull fracture)
907.1	Late effect of injury to cranial nerve
910.0	Superficial injury to face, scalp, and neck
920.0	Contusion of face, scalp, and neck
925.0	Crushing injury of face, scalp, and neck
951.0-951.9	Injury to other cranial nerve(s)
957.0	Superficial nerves of head and neck
959.0	Head injury unspecified

1999-2000

<u>NCODE</u>	<u>Contributing Cause of Death</u>
S00	Superficial injury of head
S00.0	Superficial to scalp
S00.7	Multiple superficial injuries of head
S00.8	Superficial injury of other parts of head
S00.9	Superficial injury of head, part unspecified
S01	Open wound of head
S01.0	Open wound of scalp
S01.7	Multiple open wounds of head
S01.8	Open wound of other parts of head
S01.9	Open wound of head, part unspecified
S02	Fracture of skull and facial bones
S02.0	Fracture of vault of skull
S02.1	Fracture of base of skull
S02.7	Multiple fractures involving skull and facial bones
S02.8	Fracture of other skull and facial bones
S02.9	Fracture of skull and facial bones, part unspecified
S03	Dislocation, sprain and strain of joints and ligaments of head
S03.3	Dislocation of other and unspecified parts of head
S03.5	Sprain and strain of joints and ligaments of other and unspecified parts of head
S04	Injury of cranial nerve
S04.1	Injury to oculomotor nerve
S04.2	Injury of trochlear nerve
S04.3	Injury of trigeminal nerve
S04.4	Injury of abducent nerve
S04.5	Injury of facial nerve
S04.6	Injury of acoustic nerve
S04.7	Injury of accessory nerve
S04.8	Injury of other cranial nerves
S04.9	Injury of unspecified cranial nerve

⁶ All deaths that resulted from head injury as a cause of death or among other causes of deaths.

S06	Intracranial injury
S06.0	Concussion
S06.1	Traumatic cerebral oedema
S06.2	Diffuse brain injury
S06.3	Focal brain injury
S06.4	Epidural haemorrhage
S06.5	Traumatic subdural haemorrhage
S06.6	Traumatic subarachnoid haemorrhage
S06.7	Intracranial injury with prolonged coma
S06.8	Other intracranial injuries
S06.9	Intracranial injury, unspecified
S07	Crushing injury of head
S07.1	Crushing injury of skull
S07.8	Crushing injury of other parts of head
S07.9	Crushing injury of head, par unspecified
S08	Traumatic amputation of part of head
S08.0	Avulsion of scalp
S08.8	Traumatic amputation of other parts of head
S08.9	Traumatic amputation of unspecified part of head
S09	Other unspecified injuries of head
S09.0	Injury of blood vessels of head, not elsewhere classified
S09.1	Injury of muscle and tendon of head
S09.7	Multiple injuries of head
S09.8	Other specified injuries of head
S09.9	Unspecified injury of head
T00	Superficial injuries involving multiple body regions
T00.0	Superficial injuries involving head with neck
T01	Open wounds involving multiple body region
T01.0	Open wounds involving head with neck
T02	Fractures involving multiple body regions
T02.0	Fractures involving head with neck
T03	Dislocations, sprains, and strains involving multiple body regions
T03.0	Dislocations, sprains, and strains involving head with neck
T04	Crushing injuries involving head with neck
T04.0	Crushing injuries involving head with neck
T06	Other injuries involving multiple body regions, not elsewhere classified
T06.0	Injuries of brain and cranial nerves with injuries of nerves and spinal cord at neck level
T90	Sequelae of injuries of head
T90.0	Sequelae of superficial injury of head
T90.1	Sequelae of open wound of head
T90.2	Sequelae of fracture of skull and facial bones
T90.3	Sequelae of injury of cranial nerves
T90.5	Sequelae of intracranial injury
T90.8	Sequelae of other specified injuries of head
T90.9	Sequelae of unspecified injury of head

2. Estimate the numbers of consumer product-related head injury deaths for 1991-2000 by using the criteria described in Estimates of Consumer Product Related Deaths, 1984 -1998 (Updated and Revised, October 2001), Ault, Kimberly, Ph.D., U.S. CPSC, Directorate for Epidemiology, Division of Hazard and Injury Data Systems⁷.
 - Select all (100%) head injury-related deaths to the victims (drivers, passengers, persons injured while boarding or alighting) of bicycles, off-road motor vehicles, or snowmobiles.
 - Select all (100%) head injury-related deaths from falls from playground equipment, chairs, or beds.
 - Select all (100%) head injury-related deaths to the victims who were struck against or struck by objects or persons, in sports.
 - Select all (100%) head injury-related deaths associated with fireworks.
 - Select the remaining head injury-related deaths by location or based on proportion of deaths estimated to fall under CPSC jurisdiction for each year.
 - Home (100%)
 - Recreation (80%)
 - Resident/Institution (80%)
 - Public Building (10%)
 - Street/Highway (0%)
 - Farm (0%)
 - Other Specified (10%)
 - Industrial Place (0%)
 - Not Specified Location, Late Effects, or Injury Undetermined Whether Accidentally or Purposely (based on proportion of deaths estimated to fall under CPSC jurisdiction for each year)
3. From step #2, estimate the total number of consumer product-related head injury deaths (where head injury was determined to be the cause of death in the presence or absence of other cited injuries) according to the Division of Hazard Analysis's head injury-related death decisions:
 - Head -The case contains at least one head injury code. It may also contain other non-head injury codes. If these non-head injuries are not believed to be severe enough to have caused the death in the absence of a head injury, the case is included in the head injury group.
 - Multiple - The case contains at least one head injury code. It also contains other non-head injury codes. Cases included in this category are those in which the injury

⁷ Technical support from Thomas J. Schroeder, Division of Hazard and Injury Data Systems, Directorate for Epidemiology, CPSC.

associated with the non-head injury code is severe enough to have caused the death even if there were no head injury.

4. Examine a breakdown of the total number of consumer product-related head injury deaths obtained in step #3 by using the external codes: ECODE for the calendar years 1991-1998 and ICD10 for the calendar years 1999-2000. These codes are presented below:

Bicycles

1. 1991-1998 :

- E800.3 – Railway accident involving collision with rolling stock – pedal cyclist
- E801.3 – Railway accident involving collision with other object – pedal cyclist
- E802.3 – Railway accident involving derailment without antecedent collision – pedal cyclist
- E803.3 – Railway accident involving explosion, fire, or burning – pedal cyclist
- E804.3 – Fall in, on, or from railway train – pedal cyclist
- E805.3 – Hit by rolling stock - pedal cyclist
- E806.3 – Other specified railway accident – pedal cyclist
- E807.3 – Railway accident of unspecified nature – pedal cyclist
- E810.6 – Motor vehicle traffic accident involving collision with train – pedal cyclist
- E811.6 – Motor vehicle traffic accident involving re-entrant collision with another motor vehicle – pedal cyclist
- E812.6 – Other motor vehicle traffic accident involving collision with motor vehicle – pedal cyclist
- E813.6 – Motor vehicle traffic accident involving collision with other vehicle – pedal cyclist
- E814.6 – Motor vehicle traffic accident involving collision with pedestrian – pedal cyclist
- E815.6 – Other motor vehicle traffic accident involving collision on the highway – pedal cyclist
- E816.6 – Motor vehicle traffic accident due to loss of control, without collision on the highway – pedal cyclist
- E817.6 – Non-collision motor vehicle traffic accident while boarding or alighting – pedal cyclist
- E818.6 – Other non-collision motor vehicle traffic accident – pedal cyclist
- E819.6 – Motor vehicle traffic accident of unspecified nature – pedal cyclist
- E820.6 – Non-traffic accident involving motor driven snow vehicle – pedal cyclist
- E821.6 – Non-traffic accident involving other off-road motor vehicle – pedal cyclist
- E822.6 – Other motor vehicle non-traffic accident involving collision with moving object – pedal cyclist
- E823.6 – Other motor vehicle non-traffic accident involving collision with stationary object – pedal cyclist
- E824.6 – Other motor vehicle non-traffic accident while boarding or alighting – pedal cyclist
- E825.6 – Other motor vehicle non-traffic accident of other and unspecified nature – pedal cyclist
- E826.1 – Pedal cycle accident – pedal cyclist
- E826.9 – Pedal cycle accident – unspecified person
- E827.1 – Animal-driven vehicle accident – pedal cyclist

2. 1999-2000:

The following fourth-character subdivisions are for use with categories V10-V18:

- .0 Driver injured in non-traffic accident
- .1 Passenger injured in non-traffic accident
- .2 Unspecified pedal cyclist injured in non-traffic accident

- .3 Person injured while boarding or alighting
- .4 Driver injured in traffic accident
- .5 Passenger injured in traffic accident
- .9 Unspecified pedal cyclist injured in traffic accident

- V10 – Pedal cyclist injured in collision with pedestrian or animal
- V11 – Pedal cyclist injured in collision with other pedal cycle
- V12 – Pedal cyclist injured in collision with two or three-wheeled motor vehicle
- V13 – Pedal cyclist injured in collision with car, pick-up truck or van
- V14 – Pedal cyclist injured in collision with heavy transport vehicle or bus
- V15 – Pedal cyclist injured in collision with railway train or railway vehicle
- V16 – Pedal cyclist injured in collision with other non-motor vehicle
- V17 – Pedal cyclist injured in collision with fixed or stationary object
- V18 – Pedal cyclist injured in non-collision transport accident (includes fall/thrown from pedal cycle, overturning, not specified, or without collision)
- V19 – Pedal cyclist injured in other and unspecified transport accidents
- V19.0 – Pedal cycle driver injured in collision with other and unspecified motor vehicles in non-traffic accident
- V19.1 – Pedal cycle passenger injured in collision with other and unspecified motor vehicles in non-traffic accident
- V19.2 – Unspecified pedal cyclist injured in collision with other and unspecified motor vehicles in non-traffic accident (pedal cycle collision NOS, non-traffic accident)
- V19.3 – Pedal cyclist injured in unspecified non-traffic accident (pedal cycle accident NOS, non-traffic accident, pedal cyclist injured in non-traffic accident NOS)
- V19.4 – Driver injured in collision with other and unspecified motor vehicles in traffic accident
- V19.5 – Passenger injured in collision with other and unspecified motor vehicles in traffic accident
- V19.6 – Unspecified pedal cyclist injured in collision with other and unspecified motor vehicles in traffic accident (pedal cycle collision NOS-traffic)
- V19.8 – Pedal cyclist injured in other specified transport accidents (trapped by part of pedal cycle)
- V19.9 – Pedal cyclist injured in unspecified traffic accident (pedal cycle accident NOS)

Other Consumer Products

1. 1991-1998:

- E820.0 – Non-traffic accident involving motor driven snow vehicle – driver
- E820.1 – Non-traffic accident involving motor driven snow vehicle – passenger
- E820.2 – Non-traffic accident involving motor driven snow vehicle – motor cyclist
- E820.3 – Non-traffic accident involving motor driven snow vehicle – passenger on motorcycle
- E820.4 – Non-traffic accident involving motor driven snow vehicle – occupant of street car
- E820.5 – Non-traffic accident involving motor-driven snow vehicle – rider of animal
- E820.7 – Non-traffic accident involving motor-driven snow vehicle – pedestrian
- E820.8 – Non-traffic accident involving motor driven snow vehicle – other specified person (other than above)
- E820.9 – Non-traffic accident involving motor driven snow vehicle – unspecified person
- E821.0 – Non-traffic accident involving other off-road motor vehicle – driver
- E821.1 – Non-traffic accident involving other off-road motor vehicle – passenger
- E821.2 – Non-traffic accident involving other off-road motor vehicle – motor cyclist
- E821.3 – Non-traffic accident involving other off-road motor vehicle – passenger of motor cycle
- E821.5 – Non-traffic accident involving other off-road motor vehicle – rider of animal

E821.7 – Non-traffic accident involving other off-road motor vehicle – pedestrian
 E821.8 – Non-traffic accident involving other off-road motor vehicle – other specified person (other than above)
 E821.9 – Non-traffic accident involving other off-road motor vehicle – unspecified person
 E880.0 – Fall on/from escalator
 E880.9 – Fall on/from other stairs or steps
 E881.0 – Fall from ladder
 E881.1 – Fall from scaffolding
 E882 – Fall from/out of building or other structure
 E883.0 – Accident from diving or jumping into water
 E884.0 – Fall from playground equipment
 E884.2 – Fall from chair
 E884.3 – Fall from wheelchair
 E884.4 – Fall from bed
 E884.5 – Fall from other furniture
 E884.6 – Fall from commode
 E884.9 – Fall from one level to another
 E885 – Fall on same level from slipping, tripping, or stumbling
 E886 – Fall on same level from collision, pushing, or shoving, by/with other person
 E886.0 – Fall same level: sports, tackles
 E886.9 – Fall same level, other and unspecified
 E887 – Fracture, cause unspecified
 E888 – Other and unspecified fall
 E916 – Struck accidentally by falling object
 E917.0 – Struck against or struck accidentally by object or person: in sports
 E917.9 – Struck against or struck accidentally by object or person: other
 E918 – Caught accidentally in/between objects
 E919.3 – Accidents caused by metal working machines
 E919.4 – Accidents caused by woodworking and metalworking machines
 E919.8 – Accidents caused by other specified machinery
 E919.9 – Accidents caused by unspecified machinery
 E920.0 – Accidents caused by cutting and piercing instruments or objects: powered lawn mower
 E920.1 – Accidents caused by cutting and piercing instruments or objects: other powered hand tools
 E920.2 – Accidents caused by cutting and piercing instruments or objects: powered household appliances and implements
 E920.3 – Cutting and piercing instruments or objects: knives, swords and daggers
 E920.4 – Cutting and piercing instruments or objects: other hand tools and implements
 E920.8 – Cutting and piercing instruments or objects: other
 E920.9 – Cutting and piercing instruments or objects: unspecified
 E921.0 – Accident caused by explosion of pressure vessel: boilers
 E921.1 – Accident caused by explosion of pressure vessel: gas cylinders (air tank, pressure gas tank)
 E921.8 – Accident caused by explosion of pressure vessel: other specified (aerosol can, automobile tire, pressure cooker)
 E921.9 – Accident caused by explosion of pressure vessel: unspecified
 E923.0 – Accident caused by explosive material: fireworks
 E923.2 – Accident caused by explosive material: gasses
 E923.9 – Accident caused by explosive material: unspecified
 E928.8 – Other and unspecified environmental and accidental causes: other
 E928.9 – Other and unspecified environmental and accidental causes: unspecified accident
 E929.0 – Late effects of accidental injury: motor vehicle accidents
 E929.1 – Late effects of other transport accidents

- E929.3 – Late effects of accidental fall
- E929.8 – Late effects of other accidents
- E929.9 – Late effects of unspecified accidents
- E985 – Injury undetermined whether accidentally or purposely inflicted: air guns
- E986 – Injury undetermined whether accidentally or purposely inflicted: cutting and piercing instruments
- E987 – Injury undetermined whether accidentally or purposely inflicted: falling from high place
- E988.8 – Injury by other and unspecified means, undetermined whether accidental: other specified means
- E988.9 – Injury by other and unspecified means, undetermined whether accidental: other unspecified means
- E989 – Late effects of injury, undetermined whether accidentally or purposely inflicted

2. 1999-2000:

- V86.0 – Driver of all-terrain or other off-road motor vehicle injured in traffic accident
- V86.1 – Passenger of all-terrain or other off-road motor vehicle injured in traffic accident
- V86.2 – Person on outside of all-terrain or other off-road motor vehicle injured in traffic accident
- V86.3 – Unspecified occupant of all-terrain or other off-road motor vehicle injured in traffic accident
- V86.4 – Person injured while boarding or alighting from all-terrain or other off-road motor vehicle
- V86.5 – Driver of all-terrain or other off-road motor vehicle injured in non-traffic accident
- V86.6 – Passenger of all-terrain or other off-road motor vehicle injured in non-traffic accident
- V86.7 – Person on outside of all-terrain or other off-road motor vehicle injured in non-traffic accident
- V86.9 – Unspecified occupant of all-terrain or other off-road motor vehicle injured in non-traffic accident
- W00 – Fall on same level involving ice and snow (excludes: ice-skates, skis, stairs and steps)
- W01 – Fall on same level from slipping, tripping and stumbling (excludes: ice or snow)
- W02 – Fall involving ice-skates, skis, roller-skates, or skateboards
- W03 – other fall on same level due to collision with, or pushing by, another person
- W05 – Fall involving wheelchair
- W06 – Fall involving bed
- W07 – Fall involving chair
- W08 – Fall involving other furniture
- W09 – Fall involving playground equipment
- W10 – Fall on and from stairs and steps (escalator, incline, ramp, ice/snow on stairs and steps)
- W11 – Fall on and from ladder
- W12 – Fall on and from scaffolding
- W13 – Fall from, out of or through building or structure (balcony, building, floor, railing, window, etc.)
- W16 – Diving or jumping into water causing injury other than drowning or submersion (hitting bottom, wall, diving board of swimming pool, or water surface)
- W18 – Other fall on same level (bumping against object, from/off toilet)
- W19 – Unspecified fall
- W20 – Struck by thrown, projected or falling object
- W21 – Striking against or struck by sports equipment
- W22 – Striking against or struck by other objects
- W23 – Caught, crushed, jammed or pinched in or between objects
- W25 – Contact with sharp glass
- W26 – Contact with knife, sword, or dagger
- W27 – Contact with non-powered hand tool
- W28 – Contact with powered lawnmower
- W29 – Contact with other powered hand tools and household machinery
- W31 – Contact with other and unspecified machinery
- W35 – Explosion and rupture of boiler

W36 – Explosion and rupture of gas cylinder
W37 – Explosion and rupture of pressurized tyre, pipe, or hose
W38 – Explosion and rupture of other specified pressurized devices
W39 – Discharge of firework
W49 – Exposure to other and unspecified inanimate mechanical forces
Y28 – Contact with sharp object, undetermined intent
Y29 – Contact with blunt object, undetermined intent
Y30 – Falling, jumping or pushed from a high place, undetermined intent
Y33 – Other specified events, undetermined intent
Y85.0 – Sequelae of motor-vehicle accident
Y85.9 – Sequelae of other and unspecified transport accidents
Y86 – Sequelae of other accidents
Y87.2 – Sequelae of events of undetermined intent
Y89.9 – Sequelae of unspecified external cause

cc: Deborah K. Tinsworth
George Rutherford