

## Instruction Manual Part 2a

### Instructions for Classifying the Underlying Cause of Death

### Errata for Year 2009

Due to the limited number of changes required for coding instructions in 2009, the 2a Instruction Manual will not be reprinted this year. The *2a Errata for Year 2009* provides replacement pages for the 2008 2a Instruction Manual. Please discard the pages indicated on the errata cover sheet and insert the replacement pages provided. This will update the coding instructions for 2009 classification purposes.

Page#	Content to be Corrected	Corrections
3-4	Major Revisions from previous manuals	Corrected page attached
14-18	Edit created code categories I610-I694 to include “bilateral”	Corrected page attached
50	Change first code span in B948/B949 instruction such that it ends in A099	Corrected page attached
52	Category E640-E649, instruction (b), delete “A chronic condition or”	Corrected page attached
53	Category E68, instruction (b) delete “A chronic condition or” <b>AND</b> Category G09, instruction (b), delete “A chronic condition or”	Corrected page attached
54	1 <sup>st</sup> sentence, change the span of numbers to exclude I672 and I673 <b>AND</b> Instruction (b), delete “A chronic condition or” <b>AND</b> Instruction (c), edit span of numbers to exclude I672 and I673 and delete chronic.	Corrected page attached
55	First example, change the condition on (a): <b>AND</b> Category I690-I698, instruction d, edit span of numbers to exclude I672 and I673 and delete chronic. <b>AND</b> Category O97, b, delete “A chronic condition or”	Corrected page attached
58	Under instruction 2, a, delete the first bullet and edit code spans in the next to last bullet	Corrected page attached
75	Add a new Intent of Certifier “0” for A099 as the first category in Section III.	Corrected page attached
91	Delete the Intent of Certifier for Pneumonia/ Bronchopneumonia (#21)	Corrected page attached

*continued...*

**2a Errata for Year 2009 *continued...***

<b>Page#</b>	<b>Content to be Corrected</b>	<b>Corrections</b>
111	Add “associated with” to the list of terms	Corrected page attached
114	Add “Etiology uncertain” to the list of terms	Corrected page attached
118	Delete A09, category title, and 1 <sup>st</sup> paragraph	Corrected page attached
188	Delete instruction c. and example	Corrected page attached
203	Instruction 2, delete “chronic”	Corrected page attached
204	Delete instruction 5 and example and renumber	Corrected page attached
207	Add B33.4 Hantavirus (cardio)-pulmonary syndrome [HPS] [HCPS] as a new Rare Cause	Corrected page attached

## Section I - A. Introduction

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### Major Revisions from Previous Manuals

1. Section I, D, Created Codes, the created code categories involving multiple cerebrovascular diseases have been edited to also include the modifier “bilateral.”
2. Section II, Rule F, Sequela, references to “chronic” were removed from sequela instructions for categories: E640-E649, E68, G09, I690-I698 and O97.
3. Rule F, Sequela, I690-I698 code spans were adjusted to exclude I672 and I673 from sequela instructions and example changed.
4. Section III, Editing and Interpreting Entries, Guides for the determination of the probability of sequence, Interpretation of “highly improbable”, deleted diarrhea and gastroenteritis of infectious origin from the list of infections that may be accepted as “due to” any other disease.
5. Section III, Editing and Interpreting Entries, Intent of certifier, added a new category for A099 as a # 0. When reported due to infectious categories, A099 terms are assigned to A090; when reported due to noninfectious categories, A099 terms are assigned to K529.
6. Section III, Editing and Interpreting Entries, Intent of certifier, deleted instruction # 21 Pneumonia and Bronchopneumonia. Since terms meaning immobility are now assigned to R263, this instruction can be handled in the 2c Modification Tables.
7. Section III, Editing and Interpreting Entries, Interpretation of nonmedical connecting terms used in reporting, added “associated with” to list of terms implying that the conditions are meant to remain on the same line.
8. Section III, Editing and Interpreting Entries, Terms that stop the sequence, added “Etiology uncertain” to list of terms that stop the sequence.
9. Section IV, Classification of categories, A09, Diarrhea and gastroenteritis of presumed infectious origin, deleted instruction since terms in the A09 category are no longer assumed to be noninfectious in developed countries. The A09 category has been expanded to include 4<sup>th</sup> characters; code assignments and code spans were corrected throughout the manual.
10. Section IV, Classification of categories, X40-X49, Accidental poisoning by and exposure to noxious substances, deleted instruction 1, c, since drug dependence is no longer preferred over poisoning.
11. Section IV, Classification of categories, Y85-Y89, Sequela of external causes of morbidity and mortality, references to “chronic” were removed from instructions.
12. Appendix A, Infrequent and Rare Cause-of-Death Edits, added B334 Hantavirus (cardio)-pulmonary syndrome [HPS] [HCPS] as a new rare cause category

## Section I - A. Introduction

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Other manuals available from NCHS which contain information related to coding causes of death are:

Part 2b, NCHS Instructions for Classifying Multiple Causes of Death, 2008 and 2b Errata for Year 2009

Part 2c, ICD-10 ACME Decision Tables for Classifying Underlying Causes of Death, 2009.

Part 2s, SuperMICAR Data Entry Instruction, 2008 and 2s Errata for Year 2009

## Section I - D. Created Codes

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- I428 Other cardiomyopathies  
**Excludes:** Any term indexed to I428 qualified as familial, idiopathic, or primary (I4280)  
\*I4280 Familial other cardiomyopathies  
Idiopathic other cardiomyopathies  
Primary other cardiomyopathies  
**Includes:** Any term indexed to I428 qualified as familial, idiopathic, or primary
- I429 Cardiomyopathy, unspecified  
**Excludes:** Any term indexed to I429 qualified as familial, idiopathic, or primary (I4290)  
\*I4290 Familial cardiomyopathy  
Idiopathic cardiomyopathy  
Primary cardiomyopathy  
**Includes:** Any term indexed to I429 qualified as familial, idiopathic, or primary
- I500 Congestive heart failure  
**Excludes:** Any term indexed to I500 qualified as advanced, grave, severe, or with a similar qualifier (I5000)  
\*I5000 Advanced congestive heart failure  
Grave congestive heart failure  
Severe congestive heart failure  
**Includes:** Any term indexed to I500 qualified as advanced, grave, severe, or with a similar qualifier
- I514 Myocarditis, unspecified  
**Excludes:** Any item indexed to I514 qualified as arteriosclerotic (I5140)  
\*I5140 Arteriosclerotic myocarditis  
**Includes:** Any term indexed to I514 qualified as arteriosclerotic

## Section I - D. Created Codes

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- I515 Myocardial degeneration  
**Excludes:** Any term indexed to I515 qualified as arteriosclerotic (I5150)  
\*I5150 Arteriosclerotic myocardial degeneration  
**Includes:** Any term indexed to I515 qualified as arteriosclerotic
- I600 Subarachnoid hemorrhage from carotid siphon and bifurcation  
**Excludes:** Ruptured carotid aneurysm (into brain) (I6000)  
\*I6000 Ruptured carotid aneurysm (into brain)
- I606 Subarachnoid hemorrhage from other intracranial arteries  
**Excludes:** Ruptured aneurysm (congenital) circle of Willis (I6060)  
\*I6060 Ruptured aneurysm (congenital) circle of Willis
- I607 Subarachnoid hemorrhage from intracranial artery, unspecified  
**Excludes:** Ruptured berry aneurysm (congenital) brain (I6070)  
Ruptured miliary aneurysm (I6070)  
\*I6070 Ruptured berry aneurysm (congenital) brain  
Ruptured miliary aneurysm
- I608 Other subarachnoid hemorrhage  
**Excludes:** Ruptured aneurysm brain meninges (I6080)  
Ruptured arteriovenous aneurysm (congenital) brain (I6080)  
Ruptured (congenital) arteriovenous aneurysm cavernous sinus (I6080)  
\*I6080 Ruptured aneurysm brain meninges  
Ruptured arteriovenous aneurysm (congenital) brain  
Ruptured (congenital) arteriovenous aneurysm cavernous sinus
- I609 Subarachnoid hemorrhage, unspecified  
**Excludes:** Ruptured arteriosclerotic cerebral aneurysm (I6090)  
Ruptured (congenital) cerebral aneurysm NOS (I6090)  
Ruptured mycotic brain aneurysm (I6090)  
\*I6090 Ruptured arteriosclerotic cerebral aneurysm  
Ruptured (congenital) cerebral aneurysm NOS  
Ruptured mycotic brain aneurysm
- I610 Intracerebral hemorrhage in hemisphere, subcortical  
**Excludes:** Any term indexed to I610 qualified as bilateral or multiple (I6100)  
\*I6100 Bilateral or multiple intracerebral hemorrhages in hemisphere, subcortical  
**Includes:** Any term indexed to I610 qualified as bilateral or multiple

## Section I - D. Created Codes

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- I611 Intracerebral hemorrhage in hemisphere, cortical  
**Excludes:** Any term indexed to I611 qualified as bilateral or multiple (I6110)  
\*I6110 Bilateral or multiple intracerebral hemorrhages in hemisphere, cortical  
**Includes:** Any term indexed to I611 qualified as bilateral or multiple
- I612 Intracerebral hemorrhage in hemisphere, unspecified  
**Excludes:** Any term indexed to I612 qualified as bilateral or multiple (I6120)  
\*I6120 Bilateral or multiple intracerebral hemorrhages, unspecified  
**Includes:** Any term indexed to I612 qualified as bilateral or multiple
- I613 Intracerebral hemorrhage in brain stem  
**Excludes:** Any term indexed to I613 qualified as bilateral or multiple (I6130)  
\*I6130 Bilateral or multiple intracerebral hemorrhages in brain stem  
**Includes:** Any term indexed to I613 qualified as bilateral or multiple
- I614 Intracerebral hemorrhage in cerebellum  
**Excludes:** Any term indexed to I614 qualified as bilateral or multiple (I6140)  
\*I6140 Bilateral or multiple intracerebral hemorrhages in cerebellum  
**Includes:** Any term indexed to I614 qualified as bilateral or multiple
- I615 Intracerebral hemorrhage, intraventricular  
**Excludes:** Any term indexed to I615 qualified as bilateral or multiple (I6150)  
\*I6150 Bilateral or multiple intracerebral hemorrhages, intraventricular  
**Includes:** Any term indexed to I615 qualified as bilateral or multiple
- I618 Other intracerebral hemorrhage  
**Excludes:** Any term indexed to I618 qualified as bilateral or multiple (I6180)  
\*I6180 Bilateral or multiple other intracerebral hemorrhages  
**Includes:** Any term indexed to I618 qualified as bilateral or multiple

## Section I - D. Created Codes

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- I619 Intracerebral hemorrhage, unspecified  
**Excludes:** Any term indexed to I619 qualified as bilateral or multiple (I6190)  
\*I6190 Bilateral or multiple intracerebral hemorrhages, unspecified  
**Includes:** Any term indexed to I619 qualified bilateral or multiple
- I630 Cerebral infarction due to thrombosis of precerebral arteries  
**Excludes:** Any term indexed to I630 qualified as bilateral or multiple (I6300)  
\*I6300 Cerebral infarction due to bilateral or multiple thrombi of precerebral arteries  
**Includes:** Any term indexed to I630 qualified as bilateral or multiple
- I631 Cerebral infarction due to embolism of precerebral arteries  
**Excludes:** Any term indexed to I631 qualified as bilateral or multiple (I6310)  
\*I6310 Cerebral infarction due to bilateral or multiple emboli of precerebral arteries  
**Includes:** Any term indexed to I631 qualified as bilateral or multiple
- I632 Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries  
**Excludes:** Any term indexed to I632 qualified as bilateral or multiple (I6320)  
\*I6320 Cerebral infarction due to bilateral or multiple unspecified occlusions or stenosis of precerebral arteries  
**Includes:** Any term indexed to I632 qualified as bilateral or multiple
- I633 Cerebral infarction due to thrombosis of cerebral arteries  
**Excludes:** Any term indexed to I633 qualified as bilateral or multiple (I6330)  
\*I6330 Cerebral infarction due to bilateral or multiple thrombi of cerebral arteries  
**Includes:** Any term indexed to I633 qualified as bilateral or multiple.



## Section I - D. Created Codes

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- I634 Cerebral infarction due to embolism of cerebral arteries  
**Excludes:** Any term indexed to I634 qualified as bilateral or multiple (I6340)  
\*I6340 Cerebral infarction due to bilateral or multiple emboli of cerebral arteries  
**Includes:** Any term indexed to I634 qualified as bilateral or multiple
- I635 Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries  
**Excludes:** Any term indexed to I635 qualified as bilateral or multiple (I6350)  
\*I6350 Cerebral infarction due to bilateral or multiple unspecified occlusions or stenosis of cerebral arteries  
**Includes:** Any term indexed to I635 qualified as bilateral or multiple
- I636 Cerebral infarction due to cerebral venous thrombosis, nonpyogenic  
**Excludes:** Any term indexed to I636 qualified as bilateral or multiple (I6360)  
\*I6360 Cerebral infarction due to bilateral or multiple cerebral venous thrombi, nonpyogenic  
**Includes:** Any term indexed to I636 qualified as bilateral or multiple
- I638 Other cerebral infarction  
**Excludes:** Any term indexed to I638 qualified as bilateral or multiple (I6380)  
\*I6380 Bilateral or multiple other cerebral infarctions  
**Includes:** Any term indexed to I638 qualified bilateral or multiple
- I639 Cerebral infarction, unspecified  
**Excludes:** Any term indexed to I639 qualified as bilateral or multiple (I6390)  
\*I6390 Bilateral or multiple cerebral infarctions, unspecified  
**Includes:** Any term indexed to I639 qualified as bilateral or multiple
- I64 Stroke, not specified as hemorrhage or infarction  
**Excludes:** Any term indexed to I64 qualified as bilateral or multiple (I6400)  
\*I6400 Bilateral or multiple strokes, not specified as hemorrhage or infarction  
**Includes:** Any term indexed to I64 qualified as bilateral or multiple

## Section I - D. Created Codes

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- I691    Sequelae of intracerebral hemorrhage  
**Excludes:** Any term indexed to I691 qualified as bilateral or multiple (I6910)  
\*I6910    Sequela of bilateral or multiple intracerebral hemorrhages  
**Includes:** Any term indexed to I691 qualified as bilateral or multiple
- I693    Sequelae of cerebral infarction  
**Excludes:** Any term indexed to I693 qualified as bilateral or multiple (I6930)  
\*I6930    Sequela of bilateral or multiple cerebral infarctions  
**Includes:** Any term indexed to I693 qualified as bilateral or multiple
- I694    Sequelae of stroke, not specified as hemorrhage or infarction  
**Excludes:** Any term indexed to I694 qualified as bilateral or multiple (I6940)  
\*I6940    Sequela of bilateral or multiple strokes, not specified as hemorrhage or infarction  
**Includes:** Any term indexed to I694 qualified as bilateral or multiple
- J101    Influenza with other respiratory manifestations, influenza virus identified  
**Excludes:** Influenza, flu, grippe (viral), influenza virus identified (without specified manifestations) (J1010)  
\*J1010    Influenza, flu, grippe (viral), influenza virus identified (without specified manifestations)
- J111    Influenza with other respiratory manifestations, virus not identified  
**Excludes:** Influenza, flu, grippe (viral), influenza virus not identified (without specified manifestations) (J1110)  
\*J1110    Influenza, flu, grippe (viral), influenza virus not identified (without specified manifestations)
- J841    Other interstitial pulmonary diseases with fibrosis  
**Excludes:** Chronic pneumonia, not elsewhere classified (J8410)  
\*J8410    Chronic pneumonia, not elsewhere classified
- J849    Interstitial pulmonary disease, unspecified  
**Excludes:** Interstitial pneumonia, not elsewhere classified (J8490)  
\*J8490    Interstitial pneumonia, not elsewhere classified
- J984    Other disorders of lung  
**Excludes:** Lung disease (acute) (chronic) NOS (J9840)  
\*J9840    Lung disease (acute) (chronic) NOS

## Section II - Procedures for Selection

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### B94.1 Sequela of viral encephalitis

Use this subcategory for the classification of viral encephalitis (conditions in A830-A839, A840-A849, A850-A858, A86) if:

- (a) A statement of a late effect or sequela of the viral encephalitis is reported.

	<u>Code for Record</u>
I (a) Late effects of viral encephalitis	B941

Code to sequela of viral encephalitis (B941) as indexed.

- (b) A chronic condition or a condition with a duration of one year or more that was due to the viral encephalitis is reported.

	<u>Codes for Record</u>
I (a) Chronic brain syndrome	F069
(b) Viral encephalitis	B941

Code to sequela of viral encephalitis (B941), since a resultant chronic condition is reported.

- (c) The viral encephalitis is stated to be ancient, history of, old, remote, or the interval between onset of the viral encephalitis and death is indicated to be one year or more whether or not the residual (late) effect is specified.

	<u>Code for Record</u>
I (a) St. Louis encephalitis-1 yr	B941

Code to sequela of viral encephalitis (B941), since a duration of 1 year is reported.

	<u>Code for Record</u>
I (a) Old viral encephalitis	B941

Code to sequela of viral encephalitis (B941), since it is stated "old."

## Section II - Procedures for Selection

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- (d) Brain damage, CNS damage, cerebral fungus, epilepsy, hydrocephalus, mental retardation, paralysis (G810-G839) is reported due to the viral encephalitis.

	<u>Codes for Record</u>
I (a) Paralysis	G839
(b) Viral encephalitis	B941

Code to sequela of viral encephalitis (B941) since paralysis is reported due to viral encephalitis.

B94.2 Sequela of viral hepatitis

Use this category for the classification of viral hepatitis (conditions in B150-B199) if:

A statement of a late effect or sequela of the viral hepatitis is reported.

B94.8 Sequela of other specified infectious and parasitic diseases  
B94.9 Sequela of unspecified infectious and parasitic diseases

Use B948 for the classification of specified infectious and parasitic diseases (conditions in A000-A099, A200-A289, A310-A70, A740-A799, A811-A829, A870-B09, B250-B89)

AND

Use B949 for the classification of only the terms “infectious disease NOS” and “parasitic disease NOS” if:

- (a) A condition that is stated to be a late effect or sequela of the infectious or parasitic disease is reported.
- (b) The infectious or parasitic disease is stated to be ancient, arrested, cured, healed, history of, inactive, old, quiescent, or remote, whether or not the residual (late) effect is specified, unless there is evidence of activity of the disease.

## Section II - Procedures for Selection

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- (c) A chronic condition or a condition with a duration of one year or more that was due to the infectious or parasitic disease is reported.

	<u>Codes for Record</u>
I (a) Reye's syndrome - 1 yr.	G937
(b) Chickenpox	B948

Code to sequela of other specified infectious and parasitic diseases (B948) since chickenpox caused a condition with a duration of one year or more.

	<u>Codes for Record</u>
I (a) Chronic brain syndrome	F069
(b) Meningococcal encephalitis	B948

Code to sequela of other specified infectious and parasitic diseases (B948) since the infectious disease caused a chronic condition.

- (d) There is indication that the interval between onset of the infectious or parasitic disease and death was one year or more, whether or not the residual (late) effect is specified.

## Section II - Procedures for Selection

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E640-E649      Sequela of malnutrition and other nutritional deficiencies

Use Sequela Code	For Categories
E640	E40-E46
E641	E500-E509
E642	E54
E643	E550-E559
E648	E51-E53 E56-E60 E610-E638
E649	E639

Use these subcategories for the classification of malnutrition and other nutritional deficiencies (conditions in E40-E639) if:

- (a) A statement of a late effect or sequela of malnutrition and other nutritional deficiencies is reported.

	<u>Codes for Record</u>
I (a) Cardiac arrest	I469
(b) Sequela of malnutrition	E640

Code to sequela of protein-energy malnutrition (E640) since I(b) is stated as “sequela of.”

- (b) A condition with a duration of one year or more is qualified as rachitic or that was due to rickets is reported.

	<u>Codes for Record</u>
I (a) Thyroid disorder - 3 years	E079
(b) Rickets	E643

Code to sequela of rickets (E643) since rickets caused a condition with a duration of one year or more.

## Section II - Procedures for Selection

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### E68 Sequela of hyperalimentation

Use this category for the classification of hyperalimentation (conditions in E67 and hyperalimentation NOS in R632) if:

- (a) A statement of a late effect or sequela of the hyperalimentation is reported.
- (b) A condition with a duration of one year or more that was due to hyperalimentation is reported.

### G09 Sequela of inflammatory diseases of central nervous system

Use this category for the classification of intracranial abscess or pyogenic infection (conditions in G000-G009, G030-G049, G060-G069, G08, except those marked with an asterisk) if:

- (a) A statement of a late effect or sequela of the condition in G000-G009, G030-G049, G060-G069, G08 is reported.
- (b) A condition with a duration of one year or more that was due to the condition in G000-G009, G030-G049, G060-G069, G08 is reported.
- (c) The condition in G000-G009, G030-G049, G060-G069, G08 is stated to be ancient, history of, old, remote, or the interval between onset of this condition and death is indicated to be one year or more, whether or not the residual (late) effect is specified.

	<u>Codes for Record</u>
I (a) Compression of brain	G935
(b) Old cerebral abscess	G09

Code to sequela of cerebral abscess since stated as old.

- (d) Brain damage, CNS damage, cerebral fungus, epilepsy, hydrocephalus, mental retardation, paralysis (G810-G839) is reported due to a condition in G000-G009, G030-G049, G060-G069, G08.

	<u>Codes for Record</u>
I (a) Hydrocephalus	G919
(b) Meningitis	G09

Code to sequela of inflammatory diseases of CNS (G09) since meningitis (G039) is reported as causing hydrocephalus.

## Section II - Procedures for Selection

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### I690-I698      Sequela of cerebrovascular disease

Use this category for the classification of cerebrovascular disease (conditions in I600-I64, I670-I671, I674-I679) if:

- (a) A statement of late effect or sequela of a cerebrovascular disease is reported.

I (a) Sequela of cerebral infarction	<u>Code for Record</u> I693
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Code to sequela of cerebral infarction (I693) since “sequela of” is stated.

- (b) A condition with a duration of one year or more was due to one of these cerebrovascular diseases.

I (a) Hemiplegia	1 year	<u>Codes for Record</u> G819
(b) Intracranial hemorrhage		I692

Code to sequela of other nontraumatic intracranial hemorrhage (I692) since the residual effect (hemiplegia) has a duration of one year.

- (c) The condition in I600-I64, I670-I671, I674-I679 is stated to be ancient, history of, old, remote, or the interval between onset of this condition and death is indicated to be one year or more, whether or not the residual (late) effect is specified.

I (a) Brain damage	<u>Codes for Record</u> G939
(b) Remote cerebral thrombosis	I693

Code to sequela of cerebral thrombosis (I693) since the cerebral thrombosis is reported as remote.

I (a) Old intracerebral hemorrhage	<u>Code for Record</u> I691
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Code to sequela of intracerebral hemorrhage since the intracerebral hemorrhage is stated as old.



## Section II - Procedures for Selection

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I (a) Cerebrovascular occlusion 6 years Code for Record  
I693

Code to sequela of cerebrovascular occlusion since the duration is one year or more.

I (a) History of CVA Code for Record  
I694

Code to sequela of CVA (I694) since history of CVA is reported.

- (d) The condition in I600-I64, I670-I671, I674-I679 is reported with paralysis (any) stated to be ancient, history of, old, remote, or the interval between onset of this condition and death is indicated to be one year or more whether or not the residual (late) effect is specified.

I (a) CVA with old hemiplegia Codes for Record  
I694 G819

Code to sequela of CVA (I694) since it is reported with hemiplegia stated as old.

O97 Sequela of direct obstetric cause

Use this category for the classification of a direct obstetric cause (conditions in O00-O927) if:

- (a) A statement of a late effect or sequela of the direct obstetric cause is reported.
- (b) A condition with a duration of one year or more that was due to the direct obstetric cause is reported.
- (c) The direct obstetric cause has a duration of one year or more.

Y85-Y89 Sequela of external causes of morbidity and mortality.

Refer to Section IV, Y85-Y89, Sequela of external causes of morbidity and mortality.

## Section II - Procedures for Selection

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**NOTE:** After application of the modification rules (A-F), selection Rule 3 should be reapplied.

	<u>Codes for Record</u>
I (a) Generalized arteriosclerosis	I709
II Cerebral embolism, endocarditis	I634 I38

Code to endocarditis (I38). Arteriosclerosis, selected by the General Principle links (LMP) with cerebral embolism. Cerebral embolism is considered a direct sequel (DS) of the endocarditis.

SECTION III  
EDITING AND INTERPRETING ENTRIES IN THE MEDICAL  
CERTIFICATION

Selection of the underlying cause is based on selecting a single condition on the lowest used line in Part I since this condition is presumed to indicate the certifier's opinion about the sequence of events leading to the immediate cause of death. However, it is recognized that certifiers do not always report a single condition on the lowest used line, nor do they always enter the related conditions in a proper order of sequence. Therefore, it is necessary to edit the conditions reported during the selection process. For this reason, standardized rules and guides are set forth in this manual.

The international coding guides are provided in this section. Also included are instructions for use in the United States designed to bring assignments resulting from reporting practices particular to the United States into closer alignment with the intent of the International Classification procedures.

The interpretations and instructions in this section are general in nature and are to be used whenever applicable. Those in Section IV apply to specific categories.

A. Guides for the determination of the probability of sequence

1. Assumption of intervening cause. Frequently on the medical certificate, one condition is indicated as due to another, but the first one is not a direct consequence of the second one. For example, hematemesis may be stated as due to cirrhosis of the liver, instead of being reported as the final event of the sequence, liver cirrhosis → portal hypertension → ruptured esophageal varices → hematemesis.

The assumption of an intervening cause in Part I is permissible in accepting a sequence as reported, but it must not be used to modify the coding.

	<u>Codes for Record</u>
I (a) Cerebral hemorrhage	I619
(b) Chronic nephritis	N039

Code to chronic nephritis (N03.9). It is necessary to assume hypertension as a condition intervening between cerebral hemorrhage and the underlying cause, chronic nephritis.

## Section III – Editing and Interpreting Entries

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	<u>Codes for Record</u>
I (a) Mental retardation	F79
(b) Premature separation	P021
(c) of placenta	

Code to premature separation of placenta affecting fetus or newborn (P02.1). It is necessary to assume birth trauma, anoxia or hypoxia as a condition intervening between mental retardation and the underlying cause, premature separation of placenta.

2. Interpretation of “highly improbable.” The expression “highly improbable” has been used since the Sixth Revision of the ICD to indicate an unacceptable causal relationship. As a guide to the acceptability of sequences in the application of the General Principle and the selection rules, the following relationships should be regarded as “highly improbable”:

a. an infectious or parasitic disease (A00-B99) reported as “due to” any disease outside this chapter, except that:

- septicemia (A40-A41, B94.8)
- erysipelas (A46, B94.8)
- gas gangrene (A48.0, B94.8)
- bacteremia (A49.0-A49.9, B94.8)
- Vincent’s angina (A69.1, B94.8)
- mycoses (B35-B49, B94.8)



May be accepted as “due to”  
any other disease

- any infectious disease may be accepted as “due to” disorders of the immune mechanism such as human immunodeficiency virus [HIV] disease or AIDS
  - any infectious disease may be accepted as “due to” immunosuppression by chemicals (chemotherapy) and radiation
  - any infectious disease classified to A000-A090, A162-B199 or B250-B64 reported as “due to” a malignant neoplasm will also be an acceptable sequence
  - varicella and zoster infections (B01-B02) may be accepted as “due to” diabetes, tuberculosis and lymphoproliferative neoplasms;
- b. a malignant neoplasm reported as “due to” any other disease, except human immunodeficiency virus [HIV] disease;
- c. hemophilia (D66, D67, D68.0-D68.2) reported as “due to” any other disease;

## Section III – Editing and Interpreting Entries

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	<u>Codes for Record</u>	
I (a) Subdural hematoma	S065	
(b) Open wound of head	S019	
II Fell in hospital	W19	
<table border="1"><tr><td>Natural</td></tr></table>	Natural	
Natural		

Code to unspecified fall (W19). Even though Natural is reported in the Manner of Death box, the subdural hematoma is reported due to an injury.

### J. Intent of certifier

In order to assign the most appropriate code for a given diagnostic entity, it may be necessary to take other recorded information and the order in which the information is reported into account. It is important to interpret this information properly so the meaning intended by the certifier is correctly conveyed. The following instructions help to determine the intent of the certifier. Apply Intent of Certifier instructions to “See also” terms in the Index as well.

For the following conditions, use the causation tables to determine if the NOS code from the title or the alternative code listed below the title should be used in determining a sequence. If the alternative code forms an acceptable sequence with the condition reported below it, then that sequence should be accepted.

#### 0. Other and unspecified gastroenteritis and colitis of unspecified origin (A099)

##### a. Code A090 (Gastroenteritis and colitis of infectious origin)

When reported due to:

A000-B99  
R75  
Y431-Y434  
Y632  
Y842

	<u>Codes for Record</u>
I (a) Enteritis	A090
(b) Listeriosis	A329

Code to A329. The code A329 is listed as a subaddress to A090 in the causation table so this sequence is accepted.

## Section III – Editing and Interpreting Entries

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- b. Code K529 (Noninfective gastroenteritis and colitis, unspecified) when reported due to conditions listed in the causation table under address code K529.

	<u>Codes for Record</u>
I (a) Enteritis	K529
(b) Abscess of intestine	K630

Code to K630. The code K630 is listed as a subaddress to K529 in the causation table, so this sequence is accepted.

### 1. Spinal Abscess (A180)

Code M462 (Nontuberculous spinal abscess) when reported due to conditions listed in the causation table under address M462:

I (a) Spinal abscess	M462
(b) Staphylococcal septicemia	A412

Code to A412, staphylococcal septicemia. The code A412 is listed as a subaddress to M462 in the causation table; therefore, this sequence is accepted.

### 2. Charcot's Arthropathy (A521)

Code G98 (Arthropathy, neurogenic, neuropathic (Charcot's), nonsyphilitic):

When reported due to:

A30	Leprosy	G608	Hereditary sensory neuropathy
E10-E14	Diabetes mellitus	G901	Familial dysautonomia
E538	Subacute combined degeneration (of spinal cord)	G950	Syringomyelia
		Q059	Spina bifida, unspecified
F101	Alcohol abuse	Y453	Indomethacin
F102	Alcoholism	Y453	Phenylbutazone
G600	Hypertrophic interstitial neuropathy	Y427	Corticosteroids
G600	Peroneal muscular atrophy		

	<u>Codes for Record</u>
I (a) Charcot's arthropathy	G98
(b) Diabetes	E149

Code to diabetes (E149). The code E149 is listed as a subaddress for G98 in the causation tables so this sequence is accepted.

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20. Varices NOS and Bleeding Varices NOS (I839)

- a. Code I859 (Esophageal varices) or
- b. Code I850 (Bleeding esophageal varices):

When reported due to or on same line with:

Alcoholic disease classified to: F101-F109

Liver diseases classified to: B150-B199, B251, B942, K700-K769

Toxic effect of alcohol classified to: T510-T519, T97

	<u>Codes for Record</u>
I (a) Varices	I859
(b) Cirrhosis of liver	K746

Code to K746. The code K746 is listed as a subaddress to I859 in the causation table; therefore, this sequence is accepted.

21. DELETED:                    Pneumonia in J188 or J189  
   Bronchopneumonia (J180)  
   (See page 3, Major revisions)

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### 22. Pneumoconiosis (J64)

Code J60 (Coal worker's pneumoconiosis):

When Occupation is reported as:

Coal miner  
Coal worker  
Miner

#### Codes for Record

Occupation: Coal Miner

I (a) Bronchitis	J40
(b) Pneumoconiosis	J60

Code to J60. Pneumoconiosis becomes coal worker's pneumoconiosis when occupation is reported as coal miner.

### 23. Alveolar Hemorrhage (diffused) (K088)

Code R048 (Lung hemorrhage) when reported with conditions listed in the causation table under address R048.

I (a) Respiratory failure	J969
(b) Alveolar hemorrhage	R048

Code to R048. The code R048 is listed as a subaddress to J969 in the causation table; therefore, this sequence is accepted.

### 24. Diaphragmatic Hernia in K44.-

Code Q790 (Congenital diaphragmatic hernia) when reported as causing hypoplasia or dysplasia of lung NOS (Q336).

#### Codes for Record

I (a) Lung dysplasia	Q336
(b) Diaphragmatic hernia	Q790
(c)	

Code to congenital diaphragmatic hernia (Q790). The code Q790 is listed as a subaddress to Q336 in the causation tables; therefore, this sequence is accepted.



### Section III – Editing and Interpreting Entries

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The following terms imply that the conditions are meant to remain on the same line. They are separated by “and” or by another connecting term that does not imply a “due to” relationship:

and	with ( <del>c</del> )
accompanied by	precipitated by
also	predisposing (to)
associated with	superimposed on
complicated by	
complicating	
consistent with	

P. Deletion of “due to” on the death certificate

When the certifier has indicated conditions in Part I were not causally related by marking through items I(a), I(b), I(c) and/or I(d), or through the printed “due to, or as a consequence of” which appears below items I(a), I(b), and I(c) on the death certificate, proceed as follows:

1. If the deletion(s) indicates none of the conditions in Part I were causally related, consider as though all of the conditions had been reported on the uppermost used line.

	<u>Codes for Record</u>
I <del>(a)</del> Heart disease	I519 I10 N039
<del>(b)</del> Malignant hypertension	
<del>(c)</del> Chronic nephritis	
II Cancer of kidney	C64

Code to heart disease, unspecified (I519), by Selection Rule 2.

## Section III – Editing and Interpreting Entries

---

	<u>Codes for Record</u>
I (a) Congestive heart failure	I500 I251
<del>(b)</del> ASHD	
(c)	
II Pneumonia	J189

Code to arteriosclerotic heart disease (I251). Congestive heart failure, selected by Rule 2, is a direct sequel (DS) to ASHD.

2. If only item, I(c) or the printed “due to, or as a consequence of” (which appears below line I(b)) is marked through, consider the condition(s) reported on line I(c) as though reported as the last entry (or entries) on the preceding line.

	<u>Codes for Record</u>
I (a) Heart block	I459
(b) Chronic myocarditis	I514 I619
<del>(c)</del> Cerebral hemorrhage	
II Bronchopneumonia	J180

Code to myocarditis, unspecified (I514) by Selection Rule 1.

3. If only one item, for example, “I(b)” or the printed “due to, or as a consequence of” (which appears below line I(a)) is marked through, consider the condition(s) reported on line I(b) as though reported as the last entry (or entries) on the preceding line.

	<u>Codes for Record</u>
I (a) Cardiac arrest	I469 K746
<del>(b)</del> Cirrhosis of liver	
(c) Alcoholism	F102

Code to alcoholic cirrhosis of liver (K703). Alcoholism is selected by the General Principle, and is linkage with mention of combination (LMC) with cirrhosis of liver.

### Section III – Editing and Interpreting Entries

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4. If the “due to, or as a consequence of” is partially deleted, consider as if completely deleted.

	<u>Codes for Record</u>
I (a) Cardiorespiratory failure Due to, or as a consequence of	R092
(b) Infarction of brain <del>Due to or</del> , as a consequence of	I639 I251
(c) Coronary arteriosclerosis	

Code to infarction of brain (I639) by applying Rule 1. Consider coronary arteriosclerosis as the second entry on I(b).

Q. Numbering of causes reported in Part I

Where the certifier has numbered all causes or lines in Part I, that is, 1, 2, 3, etc., the originating antecedent is selected by applying Selection Rule 2. In the application of this rule, consideration is given to all causes which are numbered whether or not the numbering is extended into Part II. This provision applies whether or not the “due to” on lines I(b), I(c), and/or I(d) are marked through.

	<u>Codes for Record</u>
I (a) 1. Coronary occlusion	I219 E149 I10 I709 N289 J1110
(b) 2. Diabetes, chronic, severe	
(c) 3. Hypertension and arteriosclerosis	
4. Renal disease	
II 5. Influenza, 1 week	

Code to coronary occlusion (I219) by applying Selection Rule 2.

Where part of the causes in Part I are numbered, the interpretation is made on an individual basis.

	<u>Codes for Record</u>
I (a) Bronchopneumonia	J180
(b) 1. Cancer of stomach	C169 E149
(c) 2. Diabetes	

Code to cancer of stomach (C169) by applying Selection Rule 1. The conditions numbered 1. and 2. are considered as if they were reported on I(b).

### Section III – Editing and Interpreting Entries

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#### R. Terms that stop the sequence

Includes:

Cause not found	Immediate cause unknown
Cause unknown	No specific etiology identified
Cause undetermined	No specific known causes
Could not be determined	Nonspecific causes
Etiology never determined	Not known
Etiology not defined	Obscure etiology
Etiology uncertain	Undetermined
Etiology unexplained	Uncertain
Etiology unknown	Unclear
Etiology undetermined	Unexplained cause
Etiology unspecified	Unknown
Final event undetermined	? Cause
Immediate cause not determined	? Etiology

	<u>Codes for Record</u>
I (a) Cardiac arrest	I469
(b) Stroke	I64
(c) Cause unknown	
(d) Diabetes	E149

Code to stroke (I64) using Rule 1. “Cause unknown” on line (c) stops the sequence.

	<u>Codes for Record</u>
I (a) Pneumonia	J189
(b) Intestinal obstruction	K566
(c) Undetermined	
(d) Ulcerative colitis	K519

Code to ulcerative colitis (K519). “Undetermined” on line (c) stops the sequence. Intestinal obstruction, selected by Rule 1, is considered a direct sequel (DS) of the ulcerative colitis.

	<u>Codes for Record</u>
I (a) Gastric ulcer, cause unknown	K259
(b) Rheumatoid arthritis	
(c)	M069

Code to gastric ulcer (K259). “Cause unknown” on line (a) stops the sequence.

SECTION IV  
CLASSIFICATION OF CERTAIN ICD CATEGORIES

A. Infrequent and Rare Causes of Death in the United States

The ICD contains conditions which are infrequent causes of death in the United States. If one of these conditions (see Appendix A) is reported as a cause of death, the diagnosis should have been confirmed by the certifier or the State Health Officer when it was first reported. A notation of confirmation should be recorded on the copy of the certificate sent to NCHS. In the absence of this notation, the NCHS coder will code the disease as stated; the State Health Officer will be contacted at the time of reconciliation of rejected data record by control cycle to confirm the accuracy of the certification.

B. Coding Specific Categories

The following are the international linkages and notes with expansions and additions concerning the selection and modification of conditions classifiable to certain categories. They are listed in tabular order. Notes dealing with linkages appear at the category from which the combination is EXCLUDED. Therefore, reference should be made to the category or code within parentheses before making the final code assignment. For a more complete listing, refer to NCHS Instruction Manual, Part 2c, ICD-10 ACME Decision Tables for Classifying the Underlying Causes of Death, 2008.

The following notes often indicate that if the provisionally selected code, as indicated in the left-hand column, is present with one of the conditions listed below it, the code to be used is the one shown in **bold** type. There are two types of combination:

“*with mention of*” means that the other condition may appear anywhere on the certificate;

“*when reported as the originating antecedent cause of*” means that the other condition must appear in a correct causal relationship or be otherwise indicated as being “due to” the originating antecedent cause.

A00-B99      Certain infectious and parasitic diseases

Except for human immunodeficiency virus [HIV] disease (B20-B24), when reported as the originating antecedent cause of a malignant neoplasm, code **C00-C97**.

## Section IV– Classification of Categories

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- A15.- Respiratory tuberculosis, bacteriologically and histologically confirmed  
Not to be used for underlying cause mortality coding.
- A16.0 Tuberculosis of lung, bacteriologically and histologically negative  
A16.1 Tuberculosis of lung, bacteriological and histological examination not done  
Not to be used for underlying cause mortality coding.
- A16.2-.9 Respiratory tuberculosis, not confirmed bacteriologically or histologically  
*with mention of:*  
J60-J64 (Pneumoconiosis), code **J65**
- A17.- Tuberculosis of nervous system  
A18.- Tuberculosis of other organs  
*with mention of:*  
A16.- (Respiratory tuberculosis), code **A16.-**, unless reported as the originating antecedent cause of and with a specified duration exceeding that of the condition in A16.-
- A22.- Anthrax  
Not to be used as the underlying cause if reported with accident, homicide, suicide anywhere on the record, could not be determined in the Manner of Death box only, or designated as an act of terrorism. Code **accident (X58), homicide (Y08), suicide (X83), could not be determined (Y33), or terrorism (U016)**

## Section IV– Classification of Categories

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	<u>Codes for Record</u>
I (a) Suffocated by smoke	T598 X00
(b) Home burned after being	
(c) struck by lightning	

Code to exposure to uncontrolled fire in building or structure (X00).  
Category X33 includes only those injuries resulting from direct contact with lightning.

	<u>Codes for Record</u>
I (a) Ruptured diaphragm	S278
(b) Driver of auto which struck	V475
(c) landslide covering road	

Code to car occupant injured in collision with fixed or stationary object, driver (V475).

X40-X49 Accidental poisoning by and exposure to noxious substances

1. Poisoning by drugs

- a. When the following statements are reported, see Table of drugs and chemicals for the external cause code and code as accidental poisoning unless otherwise indicated.

Interpret all these statements to mean poisoning by drug and code as poisoning whether or not the drug was given in treatment:

drug taken inadvertently  
lethal (amount) (dose) (quantity) of a drug  
overdose of drug  
poisoning by a drug  
toxic effects of a drug  
toxic reaction to a drug  
toxicity (of a site) by a drug  
wrong dose taken accidentally  
wrong drug given in error

Male, 2 years	<u>Codes for Record</u>
I (a) Overdose of aspirin	T390 X40
(b) Flu and cold	J1110 J00
(c)	
II Aspirin given for fever - 10 days	T390 R509

Code to X40, accidental poisoning by and exposure to nonopioid analgesics, antipyretics, and antirheumatics.

## Section IV– Classification of Categories

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	<u>Codes for Record</u>
I (a) Poisoning by barbiturates	T423 X41

Code to X41, accidental poisoning by and exposure to anti-epileptic, sedative-hypnotic, anti-parkinsonism and psychotropic drugs, not elsewhere classified.

- b. Interpret “intoxication by drug” to mean poisoning by drug unless indicated or stated to be due to drug therapy or as a result of treatment for a condition. Refer to Section IV, B, Y40-Y59 for instructions regarding intoxication by drug.

	<u>Codes for Record</u>
I (a) Respiratory failure	J969
(b) Digitalis intoxication	T460 X44

Code to X44, digitalis intoxication as poisoning when there is no indication the drug was given for therapy.



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- Y883 Sequela of surgical and medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure
- Y890 Sequela of legal intervention
- Y891 Sequela of war operations
- Y899 Sequela of unspecified external cause

1. Stated sequela of external causes, injuries or trauma unless the interval between date of external cause and date of death is less than 1 year.

	<u>Codes for Record</u>
I (a) Sequela of hip fracture	T931
(b)	
(c)	
II	Y86

Code to Y86 since a sequela of hip fracture is reported.

2. Injuries described as ancient, healed, history of, late effect of, old, remote or delayed union, malunion or nonunion of a fracture regardless of duration.

	<u>Codes for Record</u>
I (a) Old head injuries	T909
(b) Gunshot wound	T941 Y870
II Attempted suicide	

Code to Y870, sequela of intentional self-harm, since injuries are “old.”

3. External causes described as ancient, history of, old, remote, regardless of reported duration.

	<u>Codes for Record</u>
I (a) Old fall, fractured hip 6 months	T931 Y86
(b)	
(c)	
II Accident Fell and fractured hip 6 months ago	T931

Code to Y86, sequela of other accidents, since the external cause is stated as “old.”

## Section IV– Classification of Categories

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4. External causes, injuries, or trauma when interval between occurrence and death is 1 year or more.

	<u>Codes for Record</u>
I (a) Fractured spine	T911
(b) Automobile accident, 18 mos ago	Y850

Code to Y850, sequela of automobile accident, since duration is one year or more.

	<u>Codes for Record</u>
I (a) Renal failure	N19
(b) Intestinal obstruction	K566
(c) Adhesions	K918
II Surgery – 16 months ago	Y883

Code to Y883, sequela of surgical and medical procedures, since surgery was performed one year or more before death.

5. A condition with a duration of one year or more reported due to the external cause, injuries, or trauma.

	<u>Codes for Record</u>
I (a) Respiratory failure	J969
(b) Paraplegia                    2 years	T913
(c) Motorcycle accident	Y850

Code to Y850, sequela of motor vehicle accident, since a condition with a duration of one year or more is reported due to the external cause. Category Y850 includes categories classified to V01-V89.

## APPENDIX A

### Infrequent and Rare Cause-of-Death Edits for Underlying and Multiple Cause-of-Death Classification

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A92	Other mosquito-borne viral fevers
A93	Other arthropod-borne viral fevers including Oropouche fever, sandfly fever, Colorado tick fever and other specified
A94	Unspecified arthropod-borne viral fever
A95	Yellow fever
A96	Arenaviral hemorrhagic fever
A98-A99	Other viral hemorrhagic fevers including Crimean-Congo, Omsk, Kyasanur Forest, Ebola virus, Hanta virus
B01	Varicella (chickenpox)
B03	Smallpox
B04	Monkeypox
B05	Measles
B06	Rubella
B08.0	Other orthopoxvirus (cowpox and paravaccinia)
B15	Acute hepatitis A - less than 20 years of age
B16	Acute hepatitis B - less than 20 years of age
B26	Mumps
B33.0	Epidemic myalgia (epidemic pleurodynia)
B33.4	Hantavirus (cardio-)-pulmonary syndrome [HPS] [HCPS]
B50-B54	Malaria
B55	Leishmaniasis
B56	African trypanosomiasis (trypanosomiasis)
B57	Chagas' disease (trypanosomiasis)
B65	Schistosomiasis

## APPENDIX A

### Infrequent and Rare Cause-of-Death Edits for Underlying and Multiple Cause-of-Death Classification

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B66	Other fluke infections (other trematode infection)
B67	Echinococcosis
B68	Taeniasis
B69	Cysticercosis
B70	Diphyllobothriasis and sparganosis
B71	Other cestode infections
B72	Dracunculiasis (dracontiasis)
B73	Onchocerciasis
B74	Filariasis (filarial infection)
J09	Influenza due to identified avian influenza virus
P35.0	Congenital rubella syndrome
U04.9	Severe acute respiratory syndrome (SARS), unspecified
W88-W91	Exposure to radiation
Y36.5	War operation involving nuclear weapons

#### Causing adverse effects in therapeutic use:

Y58	Bacterial vaccines
Y59.0	Viral vaccines
Y59.1	Rickettsial vaccines
Y59.2	Protozoal vaccines
Y59.3	Immunoglobulin