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# **Instruction Manual**

## **Part 11**

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**Computer Edits for Mortality Data, Including Separate Section for Fetal Deaths  
Effective 2011**

From the CENTERS FOR DISEASE CONTROL AND PREVENTION/ National Center for Health Statistics

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# **Instruction Manual**

## **Part 11**

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### **Computer Edits for Mortality Data, Including Separate Section for Fetal Deaths Effective 2011**

#### **Vital Statistics**

Data Preparation

U.S. DEPARTMENT of HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Center for Health Statistics  
Hyattsville, Maryland  
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## Acknowledgments

This instruction manual was prepared by the Division of Vital Statistics (DVS) under the general direction of Robert N. Anderson, Ph.D., Chief of the Mortality Statistics Branch (MSB) and Charles Rothwell, Director of DVS. Arialdi Minino (MSB) wrote the text and coordinated production of the manual. Donna Glenn (ret.) of Mortality Medical Classification Branch (MMCB), Joyce Bius (ret.), Tanya Pitts (ret.), Julia Raynor (ret.), June Pearce, and Tyinga Crawford (MMCB, DVS) provided expertise in creating the valid and invalid ICD-10 codes and the edits. Sherry L. Murphy, Donna L. Hoyert, Robert N. Anderson and Kenneth D. Kochanek provided review of the instruction manual. David Johnson of the Systems, Programming, and Statistical Resources Branch, (DVS) provided review of the demographic edits.

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Questions concerning interpretation of mortality data should be referred to the Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics, 3311 Toledo Road, Room 7318, Hyattsville, Maryland 20782.

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VITAL STATISTICS COMPUTER EDITS  
FOR  
MORTALITY DATA, EFFECTIVE **2011**

I. INTRODUCTION

A. Purpose of This Manual

This manual presents a comprehensive description of the mainframe computer edits used by the National Center for Health Statistics (NCHS) in processing mortality data. **Relative to the last revision published<sup>†</sup>, this manual includes edits that are effective for data year 2011.** The edits include both medical edits for the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems, Corrected and Updated by NCHS (ICD-10) and demographic edits. Edits for three different applications are discussed in this manual:

- (1) the final mortality file which consists of death certificates filed for all deaths occurring in the United States in a calendar year. For this file, the data are tabulated and published annually.
- (2) the preliminary mortality file which is based on a continuous receipt of a large sample of death certificates that are processed and tabulated on a semi-annual basis for U.S. deaths occurring in the 12-month period January-December. The purpose of the preliminary mortality file is to produce data on an expedited basis compared with the final file.
- (3) the fetal death file which is based on reports of fetal death received by NCHS from State registration offices. All 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam participate in the fetal-death reporting system. The U.S. Standard Report of Fetal Death issued by the Public Health Service (last revision 2003) served as a model to attain uniformity in the contents of documents used to collect fetal mortality information. The fetal death file is separate from the mortality files discussed above.

<sup>†</sup> "Instruction Manual Part 11: Computer Edits for Mortality Data, Including Separate Section for Fetal Deaths, Effective 2010." [http://www.cdc.gov/nchs/data/dvs/2010\\_PT11.pdf](http://www.cdc.gov/nchs/data/dvs/2010_PT11.pdf)



It should be noted that the final mortality file essentially consists of the January-December preliminary mortality file plus all additional and adjudicated death records received through nine months after the end of the calendar year.

Edits used for mainframe processing of the final mortality file are likely to be of greatest relevance and interest to the States, while edits used for the preliminary file are used by NCHS on a current flow to produce annual preliminary mortality statistics.

Both the final and the preliminary mortality files are generated through a series of processing steps including data collection, data entry, and computer processing. Editing of the coded data to assure code validity and consistency among variables is carried out at both the data entry and mainframe computer processing stages. The data entry edits, performed either manually or interactively on a data entry computer, enable detection and correction of major inconsistencies at the point of data entry. The mainframe edits utilize greater computer capability to provide a more comprehensive edit, yet generally require reject reconciliation for correction of errors. Thus, the data entry edits are composed of a small selective subset of the more comprehensive mainframe edits. This manual contains only the mainframe edits.

The mainframe computer edits are performed at strategic locations (appropriate to their function and application) within the processing flow. They are applied only after the data have passed key entry quality control standards and key entry edit criteria.

## B. Revisions from Previous Manual

Changes between this manual and the previous one (effective **2011**) are shown in **bold** print. Codes and text that have been deleted from tables have been ~~struck out~~ and the text color appears lighter.

Following is a summary of the major changes:

1. The following ICD-10 codes have been deleted from the table of codes valid for both underlying and multiple cause-of-death classification (table C): E108, E118, E128, E138, E148, H547, K350, K351, K359, L89, N180, N188, O96, O97, X34.
2. The following ICD-10 codes have been added to the table of codes valid for both underlying and multiple cause-of-death classification (table C): B179, D685, D686, D893, E883, G14, G214, H549, I725, J123, J211, K123, K352, K353, K358, L890, L891, L892, L893, L899, N181, N182, N183, N184, N185, N423, O142, O432, O960, O961, O969, O970, O971, O979, O987, X340, X341, X348, X349.
3. The following created code has been deleted from the table of NCHS created codes (table F): J8410.
4. The following changes were made to the table for age / cause and sex / cause consistency edits for ICD-10 codes valid for both underlying and multiple cause-of-death classification (table G):
  - An “absolute” age edit was added for code G14.
  - The sex edit for the following code has been changed from “absolute” to “conditional”: Y42.5
5. The following ICD-10 code has been added to the table of infrequent and rare cause-of-death edits for underlying and multiple cause of death classification (table J): B60.2.
6. The following ICD-10 codes were added to the table of codes valid for causes of fetal death (table L): B179, B334, D685, D686, E164, G904, I422, I513, P220, P916, P510, P610, P616, P618, P810, P819, P838, P913, P93, Q315, Q716, Q983, R14, R18, R190, R220, R238, R298, R456, R772, R898, \*U01, and S000-T983.

## II. FINAL MORTALITY FILE COMPUTER EDITS

The final mortality file is used to produce annual detailed tabulations of demographic and geographic data and contains both underlying and multiple cause-of-death data. The demographic and medical data are entered and processed separately. The demographic data are first key entered and sample verified with interactive key entry editing. The resultant demographic record is then established as a master control record in checks of file completeness and subsequent edits of the geographic, demographic, and control variables. On a separate track, the medical data are key entered and sample verified. The mainframe edits are then applied to check code validity for each variable. Finally, the demographic and medical data are merged into one composite record at which point demographic/medical consistency edits are applied. In addition, this stage rechecks medical code validity and lists rare causes for review.

Since NCHS receives the death records on a flow basis, all of the above edits are performed on a continuous basis and records that fail the edits are adjudicated on a continuous basis. At the time the final mortality file is closed (9 months after the end of the data year), all records have been included in the file and adjudicated.

It should be noted that at many points during the processing of the file computer software will reject records for reasons other than failure to meet the edit criteria in this manual. In particular, the MICAR<sup>1</sup>, ACME<sup>2</sup>, and TRANSAX<sup>3</sup> automatic coding systems reject records for resolution of issues which cannot be handled automatically.

The automated edits are designed to (1) assure code validity for each variable and (2) verify codes or code combinations which are considered either impossible or unlikely occurrences. Additionally, for certain demographic variables, the edits convert codes which are unacceptable for statistical analysis to acceptable codes. In edit failures, the proper code is determined in one of two ways. In specific situations, the proper code is imputed or automatically

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<sup>1</sup>Acronym for Mortality Medical Indexing, Classification, and Retrieval which is used to initially enter cause-of-death information.

<sup>2</sup>Acronym for Automated Classification of Medical Entities system which checks the condition codes for validity and automatically assigns the underlying cause of death from the condition codes.

<sup>3</sup>Acronym for Translation of Axis system which translates the condition codes from an entity axis of classification to a record axis of classification for purposes of general multiple cause tabulation and analysis.

generated without reference to the source certificate. In other situations, the record is rejected and listed for adjudication of the codes with the information in the source document and/or with the State health department.

The kind of action is dependent on the variable category involved in the edit. Edits for unlikely occurrences (conditional edits) are always checked with the source document. When a data record is edit rejected, the corrected record is once again processed through the edits to verify passage of the edit (conditional edits are deactivated in the second pass). The edits and their resulting actions are summarized in table A.

A detailed description of all mainframe computer edits is provided below.

A. Demographic Items

Table B-1 provides, for each demographic variable, the edit criteria (if any) which are applied to each category of the variable. This table generally follows the variable structure and value criteria defined by the old (1989) version of the U.S. Standard Certificate of Death. Table B-2 provides edit criteria that are applicable to demographic variables modified in the revised U.S. Standard Certificate of Death. It is important to note, however, that some states that are still using the old Standard Certificate of Death are using the new Federal Information Processing Standard (FIPS) codes and / or are providing multiple race information in the revised race format (or some variation of it). That is, for some states, table B-2 applies to the geographic and / or race variables while table B-1 applies to the balance of the variables. Records that are received by NCHS from States that have implemented the new (2003) standard certificate must be processed following the guidelines indicated on table B-2.

Failed edits are identified in terms of whether the results are imputed or rejected for adjudication. Records having failed edits on the “place of death” (occurrence) and “residence of decedent” items are rejected and are listed for reference to the source document to establish the proper code assignment.

B. Medical Items

Valid cause-of-death codes in ICD-10 are categorized in terms of their validity for underlying and multiple cause-of-death classification.

1. Codes Valid for Both Underlying and Multiple Causes of Death

Table C lists the codes valid for both underlying and multiple cause classification.

2. Codes Valid for Multiple Cause Only

Tables D and E list the ICD-10 codes which are valid for multiple cause coding but not for underlying cause coding. Table D contains the Nature of Injury codes from Chapter XIX, Injury, poisoning and certain other consequences of external causes (S00-T98).

Table E lists other codes in ICD-10 Chapters I-XVIII and XX which are valid for multiple cause coding only. Included in this group are Postprocedural endocrine, metabolic, nervous system, eye, adnexa, ear, mastoid process, circulatory system, respiratory, digestive system, musculoskeletal, and genitourinary system disorders, not elsewhere classified. Also included in this group are Complications following abortion and ectopic and molar pregnancy. The rules for underlying cause-of-death classification prefer other codes over those listed in this table. (For more detail, see Part 2a of this Vital Statistics Instruction Manual series.)

### 3. Created Codes

Table F contains a list of special five-digit codes (plus R97) and their complementary valid ICD-10 codes. The created codes are used at the stage medical conditions are coded. They have been created to facilitate automated identification of causal and modification relationships between certain medical conditions when they are processed by the ACME and TRANSAX computer systems. After they have served this purpose, they are converted to their complementary valid ICD-10 codes and do not appear on the final master death tape or in NCHS tabulations of causes of death. Further explanation of the use of these codes may be found in Parts 2b and 2c of this Vital Statistics Instruction Manual series.

## C. Composite Medical/Demographic Record

After the demographic and medical data are merged, the following edits are performed:

### 1. Age/Cause, Sex/Cause Consistency Edits

The purpose of this computer edit is to maintain consistency between a reported underlying or multiple cause of death and the age and/or sex of the decedent. Table G lists the consistency edits applicable to codes given earlier in Table C (codes valid for both underlying and multiple causes of death). Table H lists consistency edits applicable to codes given earlier in Tables D and E (codes valid for multiple cause coding only). The limitations embody the concept that certain combinations of cause of death with age or sex are either impossible (absolute limitation) or that the combinations are highly improbable (conditional limitation). The causes of death shown in these lists include age and/or sex absolute or conditional limitations explicit in ICD-10. Additional conditional

limitation edits are applied to ICD-10 categories where occurrence of the category with particular age/sex combinations is considered to be highly improbable or where experience has shown that a particular cause is especially prone to coding error. In general, the source document is examined to determine if the medical and demographic data are accurately coded based on reporting. Where inaccurate, the codes are corrected. When coded data agree with reported information, no change is made if the edit is conditional in nature. If the edit is absolute, the age (or sex) is arbitrarily retained as coded, and the cause(s) are changed to the minimum necessary to pass the edit.

2. Edits on Manner of Death

Table I contains a list of edits performed on values of the variable “Manner of Death,” as appears on item 29 of the U.S. Standard Certificate of Death (1989 revision) or on item 37 of the 2003 revision of the same document. The purpose of these edits is to maintain consistency between the reported manner of death (natural, accident, suicide, homicide, pending investigation, cannot be determined) and the age of the decedent and the reported underlying cause of death.

3. Infrequent and Rare Cause-of-Death Edits

Table J contains a list of infrequent and rare causes of death in the United States. These causes of death occur rarely and/or present threats to public health in the United States. As a result, each case should be verified to make sure there was no error in certification. When NCHS requests confirmation of a rare cause of death, the Vital Statistics Cooperative Program (VSCP) project director should work with staff to verify that the cause-of-death coding is correct and obtain corroboration from the State Health Officer before signing the confirmation letter. A notation of confirmation should also 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 VSCP project officer will be contacted at the time of reconciliation of rejected data records by control cycle to confirm the accuracy of the certification.

4. Place-of-Occurrence Edits for Selected External Causes of Death

Table K lists the place-of-occurrence edits for selected external causes of death (ICD-10 W00-Y34, except Y06.\_ and Y07.\_) that may be either an underlying or a multiple cause of death. The table includes valid place-of-occurrence codes that denote the place where the external cause of death occurred. For a listing of place-of-occurrence codes and their definitions see ICD-10, Vol. 1, in the beginning of Chapter XX. The place-of-occurrence codes assigned are based on reported entries on State death

certificate items equivalent to the 1989 revision of the U.S. Standard Certificate of Death item "30e. Place of injury".

### III. PRELIMINARY MORTALITY FILE COMPUTER EDITS

The preliminary mortality file has less detailed tabulations of demographic and geographic data than the final mortality file and is restricted to tabulations of only the underlying cause of death. It includes death records received by NCHS about four months after the end of the 12-month period January-December. The preliminary mortality file consists of a substantial sample (usually, at least 75 percent for each State) of the death certificates included in the final mortality file.

The demographic and medical data are entered and processed separately. The demographic data are first key entered and sample verified with interactive key entry editing. The resultant demographic record is then established as a master control record in checks of file completeness and in subsequent edits of the geographic, demographic, and control variables. On a separate track, the medical data are key entered and sample verified. The mainframe edits are then applied to check code validity for each variable. Finally, the demographic and medical data are merged into one composite record at which point demographic/medical consistency edits are applied.

Since NCHS receives the death records on a flow basis, all of the above edits are performed on a continuous basis and records that fail the edits are adjudicated on a continuous basis. However, at the cut point, the point at which records are no longer accepted for a preliminary mortality file (about four months after the January-December period), some records that failed the edits have not been adjudicated. Due to the need for timely release of the preliminary mortality data, there is not enough time to adjudicate all errors in the preliminary mortality file. Therefore, some of the edit procedures for the preliminary mortality file differ from those for the final mortality file. For example, for the demographic/medical consistency edits, records that fail the "absolute" edits are deleted from the preliminary mortality file. Records that fail the "conditional" edits are not reviewed, but are retained in the preliminary mortality file.

The automated edits are designed to (1) assure code validity for each variable and (2) verify codes or code combinations which are considered either impossible or unlikely occurrences. Additionally, for certain demographic variables, the edits convert codes which are unacceptable for statistical analysis to acceptable codes. In edit failures, the proper code is determined in one of two ways. In specific situations, the proper code is imputed or automatically generated without reference to the source certificate. In other situations, the

record is rejected and listed for adjudication of the codes with the information on the source document and/or with the State health department.

All the demographic items that fail the demographic edits (except place of death) and “residence of decedent” (county/city) are imputed and all records that fail the “absolute” demographic/medical edits are deleted from the file. The edits and their resulting actions are summarized in table A.

A detailed description of all mainframe computer edits is provided below.

A. Demographic Items

Tables B-1 and B-2 provide, for each demographic variable, the edit criteria (if any) which are applied to each category of the variable. Records that fail edits for demographic items other than “place of death” (occurrence) and “residence of decedent” (county/city) are imputed. At the cut point, if the edit for “place of death” (State of occurrence) fails, the record is deleted. The edits for “place of death” (county of occurrence) and “residence of decedent” (county/city) are not used. The edit for “residence of decedent” (State of residence), however, is used.

B. Medical items

Valid cause-of-death codes in ICD-10 are categorized in terms of their validity for underlying and multiple cause-of-death classification.

1. Codes Valid for Both Underlying and Multiple Causes of Death

Table C lists the codes valid for both underlying and multiple cause classification. At the cut point, if a cause-of-death code is invalid, the record is deleted from the preliminary mortality file.

2. Codes Valid for Multiple Cause Only

Tables D and E list the ICD-10 codes which are valid for multiple cause coding but not for underlying cause coding. Table D contains the Nature of Injury codes from Chapter XIX, Injury, poisoning and certain other consequences of external causes (S00-T98).

Table E lists other codes in ICD-10 Chapters I-XVIII and XX which are valid for multiple cause coding only. Included in this group are Postprocedural endocrine, metabolic, nervous system, eye, adnexa, ear, mastoid process, circulatory system, respiratory, digestive system, musculoskeletal, and genitourinary system disorders, not elsewhere classified. Also included in this group are Complications following abortion and ectopic and molar pregnancy. The rules for underlying cause-of-death classification prefer other codes over those listed in this table. (For more detail, see Part 2a of this Vital Statistics Instruction



Manual series.) At the cut point, if a cause-of-death code is invalid, the record is deleted from the preliminary mortality file.

### 3. Created Codes

Table F contains a list of special five-digit codes (plus R97) and their complementary valid ICD-10 codes. The created codes are used at the stage medical conditions are coded. They have been created to facilitate automated identification of causal and modification relationships between certain medical conditions when they are processed by the ACME and TRANSAX computer systems. After they have served this purpose, they are converted to their complementary valid ICD-10 codes and do not appear on the final master death tape or in NCHS tabulations of causes of death. Further explanation of the use of these codes may be found in Parts 2b and 2c of this Vital Statistics Instruction Manual series.

### C. Composite Medical/Demographic Record

After the demographic and medical data are merged, the following edits are performed:

#### 1. Age/Cause, Sex/Cause Consistency Edits

The purpose of this computer edit is to maintain consistency between a reported underlying or multiple cause of death and the age and/or sex of the decedent. Table G lists the consistency edits applicable to codes given earlier in Table C (codes valid for both underlying and multiple causes of death). Table H lists consistency edits applicable to codes given earlier in Tables D and E (codes valid for multiple cause coding only). The limitations embody the concept that certain combinations of cause of death with age or sex are either impossible (absolute limitation) or that the combinations are highly improbable (conditional limitation). The causes of death shown in these lists include age and/or sex absolute or conditional limitations explicit in ICD-10. Additional conditional limitation edits are applied to ICD-10 categories where occurrence of the category with particular age/sex combinations is considered to be highly improbable or where experience has shown that a particular cause is especially prone to coding error. At the cut point, the conditional limitation edits, shown in tables G and H, are not used for the preliminary mortality file. In general, the source document is examined to determine if the medical and demographic data are accurately coded based on reporting. At the cut point, records that fail the “absolute” edits shown in tables G and H are deleted from the preliminary mortality file. The “conditional” edits shown in tables G and H are not used.

2. Edits on Manner of Death

Edits on variable “Manner of Death” are not used for the preliminary mortality file.

3. Infrequent and Rare Cause-of-Death Edits

The infrequent and rare cause-of-death edits shown in table J are not used for the preliminary mortality file.

4. Place-of-Occurrence Edits for Selected External Causes of Death

Table K lists the place-of-occurrence edits for selected external causes of death (ICD-10 W00-Y34, except Y06.\_ and Y07.\_) that may be either an underlying or a multiple cause of death. The table includes valid place-of-occurrence codes that denote the place where the external cause of death occurred. For a listing of place-of-occurrence codes and their definitions see ICD-10, Vol. 1, in the beginning of Chapter XX. The place-of-occurrence codes assigned are based on reported entries on State death certificate items equivalent to the 1989 revision of the U.S. Standard Certificate of Death item “30e. Place of injury”.

Table A. Demographic Edits and ICD-10 Cause-of-Death Edits for the Final Mortality File and the Preliminary Mortality File and Resulting Action if a Record Fails the Edit (impute; reject and adjudicate; or delete the record)

Edit table	Edit	Final file		Preliminary file	
		Impute	Reject	Impute	Delete
<i>Demographic</i>					
B-1, B-2	All items, except Place of death and Residence of decedent	X		X	
B-1, B-2	Place of death (State)		X		X
B-1, B-2	Place of death (county)		X	Not used	
B-1, B-2	Residence of decedent (State)		X	X	
B-1, B-2	Residence of decedent (county/city)		X	Not used	
<i>Cause-of-death</i>					
C	ICD-10 codes valid for underlying and multiple causes		X		X
D	ICD-10 nature-of-injury codes valid for multiple causes only		X		X
E	ICD-10 codes valid for multiple causes only		X		X
G	Age/cause and sex/cause consistency edits for ICD-10 codes valid for both underlying and multiple causes (absolute)		X		X
G	Age/cause and sex/cause consistency edits for ICD-10 codes valid for both underlying and multiple causes (conditional)		X	Not used	
H	Age/cause and sex/cause consistency edits for ICD-10 codes valid for multiple causes only (absolute)		X		X
H	Age/cause and sex/cause consistency edits for ICD-10 codes valid for multiple causes only (conditional)		X	Not used	
I	Age and Cause Consistency Edits for "Manner of Death" Variable	X		Not used	
J	Infrequent and rare cause-of-death edits for underlying and multiple cause-of-death		X	Not used	
K	Place-of-occurrence edits for selected external causes of death	X		X	

Table B-1. Edits for Demographic Items Under 1989 U.S. Standard Certificate Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Sex	Code must be valid and other than "not stated".	Imputation: If last digit of certificate number is odd number, sex is assigned female code.  If last digit of certificate number is even number, sex is assigned male code.
Date of Death: Month	Code must be valid and other than "not stated".	Imputation: Date of death from last preceding record containing a valid date of death is substituted.
Day	Code must be valid (month is valid also).	Imputation: Assign to "not classifiable" code.
Age of Decedent: Number of Units	Both codes must be valid.	Imputation: Assign to "not classifiable" code (999).
Units	Combination of unit and number of units must be acceptable.	(See page 14.)

IF UNIT OF AGE IS:	AND NO. OF UNITS IS:	THEN FINAL EDITED AGE IS:
9 (not classifiable)	Anything -----	)
Codes 0, 2-6	00 -----	)
Code 1 (100 or more years)	Greater than 35 -----	)
Code 2 (months)	Greater than 23 -----	)
Code 3 (weeks)	Greater than 47 -----	) 999 (not
Code 4 (days)	Greater than 60 -----	) classifiable)
Code 5 (hours)	Greater than 72 -----	)
Code 6 (minutes)	Greater than 95 -----	)
Code 0 (years - less than 100)	01-99	001-099
Code 1 (100 or more years)	00-35	100-135
Code 2 (months)	01-11	201-211
Code 2 (months)	12-23	001 (1 year)
Code 3 (weeks)	01-03	301-303
Code 3 (weeks)	04-08	201 (1 month)
Code 3 (weeks)	09-12	202 (2 months)
" " "	13-17	203 (3 months)
" " "	18-21	204 (4 months)
" " "	22-25	205 (5 months)
" " "	26-29	206 (6 months)
" " "	30-34	207 (7 months)
" " "	35-38	208 (8 months)
" " "	39-42	209 (9 months)
" " "	43-47	210 (10 months)
Code 4 (days)	01-27	401-427
" " "	28-59	201 (1 month)
" " "	60	202 (2 months)
Code 5 (hours)	01-23	501-523
Code 5 (hours)	24-72	401-403 (days)
Code 6 (minutes)	01-59	601-659
Code 6 (minutes)	60-95	501 (1 hour)
Codes 2-6 (months-minutes)	99 (no. of units not classifiable)	2-6, 99*

\*In the age recoding process, unknown number of months is allocated to 1 month; unknown number of weeks is allocated to 1 week; unknown number of days is allocated to 1 day; unknown number of hours is allocated to 1 hour; unknown number of minutes is allocated to under 1 hour.

Table B-1. Edits for Demographic Items Under 1989 U.S. Standard Certificate Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Date of Birth: Month	Code must be valid.	Imputation: Assign to "not classifiable" code.
Day	Code must be valid.	Imputation: Assign to "not classifiable" code.
Year	Code must be valid. <b>1876-2011</b> are valid for <b>2011</b> . For subsequent data years, add 1 to the lower and upper limits of the range (e.g. for <b>2012</b> , the range is <b>1877-2012</b> ).	Imputation: Assign to "not classifiable" code.
State of Birth of Decedent	Code must be valid.	Imputation: Convert invalid code to "not classifiable" code.
Place of Death: State/County	State/county code combination must be valid.	For Final: Reject for correction. For Preliminary: State-Delete record. County-Edit not used.
Type of Place of Death	Code must be valid.	Imputation: Convert invalid code to "not classifiable" code.
Marital Status of Decedent	Code must be valid.	Imputation: Convert invalid code to "not classifiable" code.
	If age of decedent is less than 12 years, marital status must be "single."	Imputation: Convert to "single" code.
Occupation of Decedent	Code must be valid.	Imputation: Convert invalid code to "not classifiable" code.
	Age under 14 years.	Imputation: Code to 917 (child).

Table B-1. Edits for Demographic Items Under 1989 U.S. Standard Certificate Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Type of Industry	Code must be valid.	Imputation: Convert invalid code to "not classifiable" code.
	Age under 14 years.	Imputation: Code to 961 (own home).
Residence of Decedent	State, County/City code combination must be valid.	For Final: Reject for correction. For Preliminary: State-Impute to place of death (State). County/City-Edit not used.
Hispanic Origin of Decedent	Code must be valid.	Imputation: Convert invalid code to "not classifiable" code.
	"Not classifiable" (code 9) and "Other and unknown Hispanic" (code 5).	Imputation: Use "State of birth" and if birthplace is Mexico (code 2), then code Mexican (code 1); if birthplace is Puerto Rico (code 52) then code to Puerto Rican (code 2); if birthplace is Cuba (code 56), then code Cuban (code 3); and if birthplace is any of the following: Argentina, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Panama Canal Zone, Paraguay, Peru, Spain, Uruguay or Venezuela, then code "Other and unknown Hispanic" (code 5). Otherwise, keep the original code 5 or 9.



Table B-1. Edits for Demographic Items Under 1989 U.S. Standard Certificate Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Race of Decedent	Code must be valid.  If code is: "Not stated" (code 9) or "Other entries" ( code 0) or "Multi-racial" (code F).	Imputation: Code record to the race of preceding record.  Imputation: Code record to the race of preceding record. NOTE: Race imputation flags are shown separately for "Not stated", "Other entries" and "Multi-racial".  Note: For imputation of race among decedents of Hispanic origin, "preceding record" is restricted to those also of Hispanic origin that have valid race data.

Table B-1. Edits for Demographic Items Under 1989 U.S. Standard Certificate Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>																																		
Education of Decedent	Code must be valid.	Imputation: Assign to “not classifiable” code.																																		
	Combination of education and age must be acceptable.	Imputation: If education is not valid or not classifiable and age is under 5 years, then assign education to “00.”  Else, if education is greater than the maximum shown for given age, assign education to “not classifiable” code.																																		
	<table border="1"> <thead> <tr> <th>Age</th> <th>Maximum Education</th> </tr> </thead> <tbody> <tr><td>Under 5 years</td><td>00</td></tr> <tr><td>5 years</td><td>01</td></tr> <tr><td>6 years</td><td>02</td></tr> <tr><td>7 years</td><td>03</td></tr> <tr><td>8 years</td><td>04</td></tr> <tr><td>9 years</td><td>05</td></tr> <tr><td>10 years</td><td>06</td></tr> <tr><td>11 years</td><td>07</td></tr> <tr><td>12 years</td><td>08</td></tr> <tr><td>13 years</td><td>09</td></tr> <tr><td>14 years</td><td>10</td></tr> <tr><td>15 years</td><td>11</td></tr> <tr><td>16 years</td><td>12</td></tr> <tr><td>17 years</td><td>13</td></tr> <tr><td>18 years</td><td>14</td></tr> <tr><td>19 years</td><td>15</td></tr> </tbody> </table>	Age	Maximum Education	Under 5 years	00	5 years	01	6 years	02	7 years	03	8 years	04	9 years	05	10 years	06	11 years	07	12 years	08	13 years	09	14 years	10	15 years	11	16 years	12	17 years	13	18 years	14	19 years	15	
Age	Maximum Education																																			
Under 5 years	00																																			
5 years	01																																			
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16 years	12																																			
17 years	13																																			
18 years	14																																			
19 years	15																																			
Injury at Work	Code must be valid. Record must include injury code (S00-T98) somewhere in medical portion of certificate, or record must be classified to underlying cause in the range C45, J60 – J704 <sup>1</sup> .	Imputation: If record does not include injury code (S00-T98) somewhere in medical portion of certificate, or if record is not classified to underlying cause C45, J60 – J70 <sup>1</sup> then convert code to “Not applicable.”																																		

<sup>1</sup> Conditions on chapters I-XVIII that are “effects of external causes.” See Instruction Manual Part 2b.

Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
State of Death	Code must be valid FIPS value (section II, Part 8A manual).	For Final: Reject for correction  For Preliminary: Delete record
Sex	Code must be valid ('M', 'F') and other than 'Unknown' ('U').	Imputation: If last digit of certificate number is odd number, sex is assigned female code.  If last digit of certificate number is even number, sex is assigned male code.

Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format - Continued

Variable: Decedent's Age:

IF UNIT OF AGE IS:                      AND NO. OF UNITS IS:                      THEN FINAL EDITED AGE IS:

---

9 (not classifiable)	Anything -----	)
Codes 1-6	000 -----	)
Code 1 (years)	Greater than 135 -----	)
Code 2 (months)	Greater than 023 -----	) 9999 (not
Code 4 (days)	Greater than 060 -----	) classifiable)
Code 5 (hours)	Greater than 072 -----	)
Code 6 (minutes)	Greater than 095 -----	)
Code 1 (years)	001-135	1001-1135
Code 2 (months)	001-011	2001-2011
Code 2 (months)	012-023	1001 (1 year)
Code 4 (days)	001-027	4001-4027
" " "	028-059	2001 (1 month)
" " "	060	2002 (2 months)
Code 5 (hours)	001-023	5001-5023
Code 5 (hours)	024-047	4001 (1 day)
Code 5 (hours)	048-071	4002 (2 days)
Code 5 (hours)	072	4003 (3 days)
Code 6 (minutes)	001-059	6001-6059
Code 6 (minutes)	60-95	5001 (1 hour)
Codes 1-6 (years-minutes)	999 (no. of units unknown/ not classifiable)	1-6, 999*

\*In the age recoding process, unknown number of months is allocated to 1 month; unknown number of days is allocated to 1 day; unknown number of hours is allocated to 1 hour; unknown number of minutes is allocated to under 1 hour. If age of decedent is not stated, age is derived by referring to date of birth and date of death.

Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Country of Birth	Code must be valid FIPS value (Section III, Part 8A manual).	Imputation: Convert invalid / blank code to “not classifiable” code ('ZZ').
State of Birth	Code must be valid FIPS value (Section II, Part 8A manual).  If Country of Birth (see preceding) is not U.S., then State of Birth must be blank.	Imputation: Convert invalid code to “unknown or blank” code ('ZZ').
City of Residence	Code must be valid FIPS value (FIPS table 55-3).  Code combination for Country, State, County, and City of residence must be valid.  If Country of Residence (see further below) is not U.S. or Canada, City of Residence must be blank.	Imputation: Convert invalid code to “not classifiable” code ('99999').  For foreign residents, convert invalid /blank code to '000.'

Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
County of Residence	<p>Code must be valid FIPS value (Section IV, Part 8 manual).</p> <p>Code combination for Country, State, County, and City of residence must be valid.</p> <p>If Country of Residence (see further below) is not U.S. or Canada, County of Residence must be blank.</p>	<p>Imputation: Convert invalid / blank code to "not classifiable" code ('999').</p>
State of Residence	<p>Code must be valid FIPS value (Section II, Part 8A manual).</p> <p>Code combination for Country, State, County, and City of residence must be valid.</p> <p>If Country of Residence (see further below) is not U.S. or Canada, State of Residence must be 'XX'. If Country of Residence is 'unknown,' then State of Residence must be 'ZZ.'</p>	<p>For Final: Reject for correction</p> <p>For Preliminary: Impute to State of Death</p> <p>Imputation: For foreign residents, convert invalid / blank code to 'XX' ('not applicable.')</p> <p>For unknown Country of Residence, convert invalid / blank code to 'ZZ.'</p>
Country of Residence	<p>Code must be valid FIPS value (Section III, Part 8A manual) and not be blank.</p> <p>Code combination for Country, State, County, and City of residence must be valid.</p>	<p>Imputation: Convert invalid / blank code to 'unknown' code ('ZZ').</p>

Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Marital Status	Code must be valid ('M', 'A', 'W', 'D', 'S', 'U')	Imputation: Code record to the marital status of preceding record of same 5-year age group and sex. Initial marital status (as set by programmers) should be established by modal value for the given age group of most recent data year. Note: Value "A" (Married but separated) is recoded to "M" (Married).
	If age of decedent is less than 12 years, marital status must be "Never Married" ('S').	Imputation: Convert marital status code to "Never Married" ('S').
Place of Death (type of facility included)	Code must be valid (1-7, 9).  Note: changes to coding from previous certificate revision include: 4= "Decedent's home <sup>1</sup> ," 5= "Hospice facility," 6= "Nursing home/Long term care facility," 9= "Unknown"	Imputation: Convert place of death code to "Unknown" ('9').

<sup>1</sup> This code extends to homes other than the decedent's own.

Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>																			
County of Death	Code must be valid FIPS value (Section IV, Part 8 manual).  Code combination for State and County of death must be valid.	For Final: Reject for correction  For Preliminary: Not used																			
Method of Disposition	Code must be valid ('B', 'C', 'D', 'E', 'R', 'O', 'U').	Imputation: Code invalid / blank method of disposition to "Unknown" ('U').																			
Time of Death	Code must be valid (0000-2400, 9999).	Imputation: Convert '2400' to '0000'.  Convert invalid / blank Time of Death to '9999'.																			
Education of Decedent	Code must be valid (1-9).	Imputation: Code invalid / blank education to "Unknown" ('9').																			
	Combination of education and age of decedent must be acceptable.	Imputation: If education is not valid or not classifiable and age is less than 8 years, then assign education to "1."																			
	<table border="1"> <thead> <tr> <th>Minimum Age</th> <th>Education</th> </tr> </thead> <tbody> <tr> <td>Any age</td> <td>1</td> </tr> <tr> <td>9 years</td> <td>2</td> </tr> <tr> <td>16 years</td> <td>3</td> </tr> <tr> <td>17 years</td> <td>4</td> </tr> <tr> <td>18 years</td> <td>5</td> </tr> <tr> <td>20 years</td> <td>6</td> </tr> <tr> <td>21 years</td> <td>7</td> </tr> <tr> <td>23 years</td> <td>8</td> </tr> <tr> <td>None</td> <td>9</td> </tr> </tbody> </table>	Minimum Age	Education	Any age	1	9 years	2	16 years	3	17 years	4	18 years	5	20 years	6	21 years	7	23 years	8	None	9
Minimum Age	Education																				
Any age	1																				
9 years	2																				
16 years	3																				
17 years	4																				
18 years	5																				
20 years	6																				
21 years	7																				
23 years	8																				
None	9																				



Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Decedent of Hispanic <sup>2</sup> (Mexican) Origin	Code must be valid ('N', 'H', 'U') and not be blank.	Imputation: If Country of Birth is Mexico, code blank to "Yes, Mexican." Otherwise, convert blank Mexican origin to "No, not Mexican" ('N').
Decedent of Hispanic <sup>2</sup> (Puerto Rican) Origin	Code must be valid ('N', 'H', 'U') and not be blank.	Imputation: If Country of Birth is Puerto Rico, code blank to "Yes, Puerto Rican." Otherwise, convert blank Puerto Rican origin to "No, not Puerto Rican" ('N').
Decedent of Hispanic <sup>2</sup> (Cuban) Origin	Code must be valid ('N', 'H', 'U') and not be blank.	Imputation: If Country of Birth is Cuba, code blank to "Yes, Cuban." Otherwise, convert blank Cuban origin to "No, not Cuban" ('N').
Decedent of Hispanic <sup>2</sup> (Other) Origin	Code must be valid ('N', 'H', 'U') and not be blank.	Imputation: If country of birth is among the following: -Argentina -Bolivia -Chile -Colombia -Costa Rica -Dominican Republic -Ecuador -El Salvador -Guatemala -Honduras -Nicaragua -Panama -Panama Canal Zone -Paraguay -Peru -Spain -Uruguay -Venezuela  Then convert blank other Hispanic origin to "Yes, other... Hispanic/Latino" ('Y').

<sup>2</sup> Hispanic Origin item is not part of the death certificate in Puerto Rico, American Samoa nor Northern Marianas – therefore, it is unnecessary to run these imputation procedures for these territories.

Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Decedent's Race: Race item 'White'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Black or African American'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'American Indian or Alaska Native'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Asian Indian'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Chinese'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Filipino'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Korean'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Vietnamese'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).

Table B-2. Edits for Demographic Items Under New U.S. Standard Certificate (2003) Format

<u>Variable</u>	<u>Edit Criterion</u>	<u>Fail Edit Corrected By</u>
Decedent's Race: Race item 'Other Asian'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Native Hawaiian'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Guamanian or Chamorro'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Samoan'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Other Pacific Islander'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).
Decedent's Race: Race item 'Other'	Code must be valid ('Y', 'N') and not be blank.	Imputation: Convert blank race item to "No" ('99'; box for given race not checked).

Note: For a technical discussion on bridging multiple-race data to a single race value, see Appendix I.

Note: For imputation of race among decedents of Hispanic origin, "preceding record" is restricted to those also of Hispanic origin that have valid race data.

Table C. ICD-10 Codes Valid for Both Underlying and Multiple Cause-of-Death Classification

A000	A184	A35	A515	A771	A982	B209	B379	B520	B744	C020	C173	C401	C510	C714
A001	A185	A360	A519	A772	A983	B210	B380	B528	B748	C021	C178	C402	C511	C715
A009	A186	A361	A520	A773	A984	B211	B381	B529	B749	C022	C179	C403	C512	C716
A010	A187	A362	A521	A778	A985	B212	B382	B530	B75	C023	C180	C408	C518	C717
A011	A188	A363	A522	A779	A988	B213	B383	B531	B760	C024	C181	C409	C519	C718
A012	A190	A368	A523	A78	A99	B217	B384	B538	B761	C028	C182	C410	C52	C719
A013	A191	A369	A527	A790	B000	B218	B387	B54	B768	C029	C183	C411	C530	C720
A014	A192	A370	A528	A791	B001	B219	B388	B550	B769	C030	C184	C412	C531	C721
A020	A198	A371	A529	A798	B002	B220	B389	B551	B770	C031	C185	C413	C538	C722
A021	A199	A378	A530	A799	B003	B221	B390	B552	B778	C039	C186	C414	C539	C723
A022	A200	A379	A539	A800	B004	B222	B391	B559	B779	C040	C187	C418	C540	C724
A028	A201	A38	A540	A801	B005	B227	B392	B560	B780	C041	C188	C419	C541	C725
A029	A202	A390	A541	A802	B007	B230	B393	B561	B781	C048	C189	C430	C542	C728
A030	A203	A391	A542	A803	B008	B231	B394	B569	B787	C049	C19	C431	C543	C729
A031	A207	A392	A543	A804	B009	B232	B395	B570	B789	C050	C20	C432	C548	C73
A032	A208	A393	A544	A809	B010	B238	B399	B571	B79	C051	C210	C433	C549	C740
A033	A209	A394	A545	A810	B011	B24	B400	B572	B80	C052	C211	C434	C55	C741
A038	A210	A395	A546	A811	B012	B250	B401	B573	B810	C058	C212	C435	C56	C749
A039	A211	A398	A548	A812	B018	B251	B402	B574	B811	C059	C218	C436	C570	C750
A040	A212	A399	A549	A818	B019	B252	B403	B575	B812	C060	C220	C437	C571	C751
A041	A213	A400	A55	A819	B020	B258	B407	B580	B813	C061	C221	C438	C572	C752
A042	A217	A401	A560	A820	B021	B259	B408	B581	B814	C062	C222	C439	C573	C753
A043	A218	A402	A561	A821	B022	B260	B409	B582	B818	C068	C223	C440	C574	C754
A044	A219	A403	A562	A829	B023	B261	B410	B583	B820	C069	C224	C441	C577	C755
A045	A220	A408	A563	A830	B027	B262	B417	B588	B829	C07	C227	C442	C578	C758
A046	A221	A409	A564	A831	B028	B263	B418	B589	B830	C080	C229	C443	C579	C759
A047	A222	A410	A568	A832	B029	B268	B419	B59	B831	C081	C23	C444	C58	C760
A048	A227	A411	A57	A833	B03	B269	B420	B600	B832	C088	C240	C445	C600	C761
A049	A228	A412	A58	A834	B04	B270	B421	B601	B833	C089	C241	C446	C601	C762
A050	A229	A413	A590	A835	B050	B271	B427	B602	B834	C090	C248	C447	C602	C763
A051	A230	A414	A598	A836	B051	B278	B428	B608	B838	C091	C249	C448	C608	C764
A052	A231	A415	A599	A838	B052	B279	B429	B64	B839	C098	C250	C449	C609	C765
A053	A232	A418	A600	A839	B053	B300	B430	B650	B850	C099	C251	C450	C61	C767
A054	A233	A419	A601	A840	B054	B301	B431	B651	B851	C100	C252	C451	C620	C768
A058	A238	A420	A609	A841	B058	B302	B432	B652	B852	C101	C253	C452	C621	C770
A059	A239	A421	A630	A848	B059	B303	B438	B653	B853	C102	C254	C457	C629	C771
A060	A240	A422	A638	A849	B060	B308	B439	B658	B854	C103	C257	C459	C630	C772
A061	A241	A427	A64	A850	B068	B309	B440	B659	B86	C104	C258	C460	C631	C773
A062	A242	A428	A65	A851	B069	B330	B441	B660	B870	C108	C259	C461	C632	C774
A063	A243	A429	A660	A852	B07	B331	B442	B661	B871	C109	C260	C462	C637	C775
A064	A244	A430	A661	A858	B080	B332	B447	B662	B872	C110	C261	C463	C638	C778
A065	A250	A431	A662	A86	B081	B333	B448	B663	B873	C111	C268	C467	C639	C779
A066	A251	A438	A663	A870	B082	B334	B449	B664	B874	C112	C269	C468	C64	C780
A067	A259	A439	A664	A871	B083	B338	B450	B665	B878	C113	C300	C469	C65	C781
A068	A260	A440	A665	A872	B084	B340	B451	B668	B879	C118	C301	C470	C66	C782
A069	A267	A441	A666	A878	B085	B341	B452	B669	B880	C119	C310	C471	C670	C783
A070	A268	A448	A667	A879	B088	B342	B453	B670	B881	C12	C311	C472	C671	C784
A071	A269	A449	A668	A880	B09	B343	B457	B671	B882	C130	C312	C473	C672	C785
A072	A270	A46	A669	A881	B150	B344	B458	B672	B883	C131	C313	C474	C673	C786
A073	A278	A480	A670	A888	B159	B348	B459	B673	B888	C132	C318	C475	C674	C787
A078	A279	A481	A671	A89	B160	B349	B460	B674	B889	C138	C319	C476	C675	C788
A079	A280	A482	A672	A90	B161	B350	B461	B675	B89	C139	C320	C478	C676	C790
A080	A281	A483	A673	A91	B162	B351	B462	B676	B900	C140	C321	C479	C677	C791
A081	A282	A484	A679	A920	B169	B352	B463	B677	B901	C142	C322	C480	C678	C792
A082	A288	A488	A680	A921	B170	B353	B464	B678	B902	C148	C323	C481	C679	C793
A083	A289	A490	A681	A922	B171	B354	B465	B679	B908	C150	C328	C482	C680	C794
A084	A300	A491	A689	A923	B172	B355	B468	B680	B909	C151	C329	C488	C681	C795
A085	A301	A492	A690	A924	B178	B356	B469	B681	B91	C152	C33	C490	C688	C796
A090	A302	A493	A691	A928	<b>B179</b>	B358	B470	B689	B92	C153	C340	C491	C689	C797
A099	A303	A498	A692	A929	B180	B359	B471	B690	B940	C154	C341	C492	C690	C798
A162	A304	A499	A698	A930	B181	B360	B479	B691	B941	C155	C342	C493	C691	C80
A163	A305	A500	A699	A931	B182	B361	B480	B698	B942	C158	C343	C494	C692	C810
A164	A308	A501	A70	A932	B188	B362	B481	B699	B948	C159	C348	C495	C693	C811
A165	A309	A502	A710	A938	B189	B363	B482	B700	B949	C160	C349	C496	C694	
A167	A310	A503	A711	A94	B190	B368	B483	B701	B99	C161	C37	C498	C695	
A168	A311	A504	A719	A950	B199	B369	B484	B710	C000	C162	C380	C499	C696	
A169	A318	A505	A740	A951	B200	B370	B487	B711	C001	C163	C381	C500	C698	
A170	A319	A506	A748	A959	B201	B371	B488	B718	C002	C164	C382	C501	C699	
A171	A320	A507	A749	A960	B202	B372	B49	B719	C003	C165	C383	C502	C700	
A178	A321	A509	A750	A961	B203	B373	B500	B72	C004	C166	C384	C503	C701	
A179	A327	A510	A751	A962	B204	B374	B508	B73	C005	C168	C388	C504	C709	
A180	A328	A511	A752	A968	B205	B375	B509	B740	C006	C169	C390	C505	C710	
A181	A329	A512	A753	A969	B206	B376	B510	B741	C008	C170	C398	C506	C711	
A182	A33	A513	A759	A980	B207	B377	B518	B742	C009	C171	C399	C508	C712	
A183	A34	A514	A770	A981	B208	B378	B519	B743	C01	C172	C400	C509	C713	

Table C. ICD-10 Codes Valid for Both Underlying and Multiple Cause-of-Death Classification - Continued

C812	C967	D123	D235	D380	D519	D693	D891	E129	E283	E631	E789	F09	F183	F380
C813	C969	D124	D236	D381	D520	D694	D892	E130	E288	E638	E790	F101	F184	F381
C817	C97	D125	D237	D382	D521	D695	<b>D893</b>	E131	E289	E639	E791	F102	F185	F388
C819	D000	D126	D239	D383	D528	D696	D898	E132	E290	E640	E798	F103	F186	F39
C820	D001	D127	D24	D384	D529	D698	D899	E133	E291	E641	E799	F104	F187	F400
C821	D002	D128	D250	D385	D530	D699	E000	E134	E298	E642	E800	F105	F188	F401
C822	D010	D129	D251	D386	D531	D70	E001	E135	E299	E643	E801	F106	F189	F402
C827	D011	D130	D252	D390	D532	D71	E002	E136	E300	E648	E802	F107	F191	F408
C829	D012	D131	D259	D391	D538	D720	E009	E137	E301	E649	E803	F108	F192	F409
C830	D013	D132	D260	D392	D539	D721	E010	<del>E138</del>	E308	E65	E804	F109	F193	F410
C831	D014	D133	D261	D397	D550	D728	E011	E139	E309	E660	E805	F111	F194	F411
C832	D015	D134	D267	D399	D551	D729	E012	E140	E310	E661	E806	F112	F195	F412
C833	D017	D135	D269	D400	D552	D730	E018	E141	E311	E662	E807	F113	F196	F413
C834	D019	D136	D27	D401	D553	D731	E02	E142	E318	E668	E830	F114	F197	F418
C835	D020	D137	D280	D407	D558	D732	E030	E143	E319	E669	E831	F115	F198	F419
C836	D021	D139	D281	D409	D559	D733	E031	E144	E320	E670	E832	F116	F199	F420
C837	D022	D140	D282	D410	D560	D734	E032	E145	E321	E671	E833	F117	F200	F421
C838	D023	D141	D287	D411	D561	D735	E033	E146	E328	E672	E834	F118	F201	F422
C839	D024	D142	D289	D412	D562	D738	E034	E147	E329	E673	E835	F119	F202	F428
C840	D030	D143	D290	D413	D563	D739	E035	<del>E148</del>	E340	E678	E838	F121	F203	F429
C841	D031	D144	D291	D414	D564	D740	E038	E149	E341	E68	E839	F122	F204	F430
C842	D032	D150	D292	D417	D568	D748	E039	E15	E342	E700	E840	F123	F205	F431
C843	D033	D151	D293	D419	D569	D749	E040	E160	E343	E701	E841	F124	F206	F432
C844	D034	D152	D294	D420	D570	D750	E041	E161	E344	E702	E848	F125	F208	F438
C845	D035	D157	D297	D421	D571	D751	E042	E162	E345	E703	E849	F126	F209	F439
C850	D036	D159	D299	D429	D572	D752	E048	E163	E348	E708	E850	F127	F21	F440
C851	D037	D160	D300	D430	D573	D758	E049	E164	E349	E709	E851	F128	F220	F441
C857	D038	D161	D301	D431	D578	D759	E050	E168	E40	E710	E852	F129	F228	F442
C859	D039	D162	D302	D432	D580	D760	E051	E169	E41	E711	E853	F131	F229	F443
C880	D040	D163	D303	D433	D581	D761	E052	E200	E42	E712	E854	F132	F230	F444
C881	D041	D164	D304	D434	D582	D762	E053	E201	E43	E713	E858	F133	F231	F445
C882	D042	D165	D307	D437	D588	D763	E054	E208	E440	E720	E859	F134	F232	F446
C883	D043	D166	D309	D439	D589	D800	E055	E209	E441	E721	E86	F135	F233	F447
C887	D044	D167	D310	D440	D590	D801	E058	E210	E45	E722	E870	F136	F238	F448
C889	D045	D168	D311	D441	D591	D802	E059	E211	E46	E723	E871	F137	F239	F449
C900	D046	D169	D312	D442	D592	D803	E060	E212	E500	E724	E872	F138	F24	F450
C901	D047	D170	D313	D443	D593	D804	E061	E213	E501	E725	E873	F139	F250	F451
C902	D048	D171	D314	D444	D594	D805	E062	E214	E502	E728	E874	F141	F251	F452
C910	D049	D172	D315	D445	D595	D806	E063	E215	E503	E729	E875	F142	F252	F453
C911	D050	D173	D316	D446	D596	D807	E064	E220	E504	E730	E876	F143	F258	F454
C912	D051	D174	D319	D447	D598	D808	E065	E221	E505	E731	E877	F144	F259	F458
C913	D057	D175	D320	D448	D599	D809	E069	E222	E506	E738	E878	F145	F28	F459
C914	D059	D176	D321	D449	D600	D810	E070	E228	E507	E739	E880	F146	F29	F480
C915	D060	D177	D329	D45	D601	D811	E071	E229	E508	E740	E881	F147	F300	F481
C917	D061	D179	D330	D460	D608	D812	E078	E230	E509	E741	E882	F148	F301	F488
C919	D067	D180	D331	D461	D609	D813	E079	E231	E511	E742	<b>E883</b>	F149	F302	F489
C920	D069	D181	D332	D462	D610	D814	E100	E232	E512	E743	E888	F151	F308	F500
C921	D070	D190	D333	D463	D611	D815	E101	E233	E518	E744	E889	F152	F309	F501
C922	D071	D191	D334	D464	D612	D816	E102	E236	E519	E748	F010	F153	F310	F502
C923	D072	D197	D337	D467	D613	D817	E103	E237	E52	E749	F011	F154	F311	F503
C924	D073	D199	D339	D469	D618	D818	E104	E240	E530	E750	F012	F155	F312	F504
C925	D074	D200	D34	D470	D619	D819	E105	E241	E531	E751	F013	F156	F313	F505
C927	D075	D201	D350	D471	D62	D820	E106	E242	E538	E752	F018	F157	F314	F508
C929	D076	D210	D351	D472	D640	D821	E107	E243	E539	E753	F019	F158	F315	F509
C930	D090	D211	D352	D473	D641	D822	<del>E108</del>	E244	E54	E754	F03	F159	F316	F510
C931	D091	D212	D353	D477	D642	D823	E109	E248	E550	E755	F04	F161	F317	F511
C932	D092	D213	D354	D479	D643	D824	E110	E249	E559	E756	F050	F162	F318	F512
C937	D093	D214	D355	D480	D644	D828	E111	E250	E560	E760	F051	F163	F319	F513
C939	D097	D215	D356	D481	D648	D829	E112	E258	E561	E761	F058	F164	F320	F514
C940	D099	D216	D357	D482	D649	D830	E113	E259	E568	E762	F059	F165	F321	F515
C941	D100	D219	D358	D483	D65	D831	E114	E260	E569	E763	F060	F166	F322	F518
C942	D101	D220	D359	D484	D66	D832	E115	E261	E58	E768	F061	F167	F323	F519
C943	D102	D221	D360	D485	D67	D838	E116	E268	E59	E769	F062	F168	F328	F520
C944	D103	D222	D361	D486	D680	D839	E117	E269	E60	E770	F063	F169	F329	F521
C945	D104	D223	D367	D487	D681	D840	<del>E118</del>	E270	E610	E771	F064	F171	F330	F522
C947	D105	D224	D369	D489	D682	D841	E119	E271	E611	E778	F065	F172	F331	F523
C950	D106	D225	D370	D500	D683	D848	E120	E272	E612	E779	F066	F173	F332	F524
C951	D107	D226	D371	D501	D684	D849	E121	E273	E613	E780	F067	F174	F333	F525
C952	D109	D227	D372	D508	<b>D685</b>	D860	E122	E274	E614	E781	F068	F175	F334	F526
C957	D110	D229	D373	D509	<b>D686</b>	D861	E123	E275	E615	E782	F069	F176	F338	
C959	D117	D230	D374	D510	D688	D862	E124	E278	E616	E783	F070	F177	F339	
C960	D119	D231	D375	D511	D689	D863	E125	E279	E617	E784	F071	F178	F340	
C961	D120	D232	D376	D512	D690	D868	E126	E280	E618	E785	F072	F179	F341	
C962	D121	D233	D377	D513	D691	D869	E127	E281	E619	E786	F078	F181	F348	
C963	D122	D234	D379	D518	D692	D890	<del>E128</del>	E282	E630	E788	F079	F182	F349	























































































































