

**Documentation for the Public Use Multiple Cause of Death
File on Comparability between ICD-9 and ICD-10:**

**A double-coded file based on the 1996 data year multiple
cause of death file**



**Centers for Disease Control and Prevention
National Center for Health Statistics**

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Introduction

This document is intended to provide guidance in accessing and using the public-use ICD-9/ICD-10 comparability file. It includes a description of the data file characteristics and limitations along with a discussion of how the data file can be used to produce measures of the comparability between the Ninth and Tenth Revisions of the International Classification of Diseases.

The Tenth Revision of the International Classification of Diseases (ICD-10) (1) was implemented in the United States beginning with 1999 mortality data. Implementation of a new revision of the ICD often introduces disruptions in time series of mortality statistics. One way of quantitatively assessing the effects of ICD revisions is through carrying out comparability studies (also known as bridge-coding studies). A main feature of these studies is that mortality data for a single year is processed, coded and classified according to both the new revision of the ICD and the previous one.

A preliminary report (2) focusing on the changes and comparability between ICD-9 and ICD-10 in the United States was published in 2001. The analyses presented in "Comparability of Cause of Death Between ICD-9 and ICD-10: Preliminary Estimates" (National Vital Statistics Reports Vol. 49, No. 2 – available at <http://www.cdc.gov/nchs/>) were based on a substantial subset of death certificates filed in 1996 in the 50 States and the District of Columbia. The report was described as "preliminary" because the data file from which its results were derived was incomplete, including only the records that could be coded in time for production of the report.

Data file characteristics

The 1996 public-use mortality data file was used as the basis for the ICD-9/ICD-10 comparability file. The 1996 mortality file was originally coded to the Ninth Revision of the ICD. The comparability file was created by appending ICD-10 variables for each 1996 record to variables that are already part of the 1996 mortality file. The result is a public-use data file in which nearly all 2,318,212 records are coded by both ICD-9 and ICD-10.

The original documentation for the 1996 public use Multiple Cause of Death data file generally applies to the ICD-9/ICD-10 comparability file. The original documentation is available electronically as part of this CD-ROM package (Mcod96.pdf) and on the Internet at: <http://www.cdc.gov/nchs/about/major/dvs/mcd/msb.htm>. Much of the material included in this document is identical to that found in the original 1996 file documentation. Descriptions of variables that are exclusive to the ICD-9/ICD-10 comparability file have been typed in **bold** text for ease of identification.

Instruction manuals describing all processes followed by the Division of Vital Statistics in managing and producing mortality data are available from NCHS. Many of these instruction manuals can be downloaded from NCHS' mortality statistics website at <http://www.cdc.gov/nchs/about/major/dvs/im.htm>. Manuals concerning coding causes of death as per ICD-10 should be of special interest to the users of this data file.

The ICD-9/ICD-10 comparability file has been included in this CD-ROM as a compressed ".ZIP" file named "ICD9_ICD10_comparability_public_use_ASCII.ZIP." Once extracted and decompressed, the resulting ASCII file named "ICD9_ICD10_comparability_public_use_ASCII.dat" has a size of 1.56 GB containing N=2,318,212 records and 144 variables. A sample program that converts the resulting ASCII file into a SAS database has been included as part of this CD-ROM package. This file is named "input_statements_comparability_file.SAS."

Users of these files should verify that their hardware and software can manage the relatively large files included in this package.

Data limitations

Not all records from the 1996 public use mortality file met the criteria that would allow them to be used for the analysis of comparability. Out of the original N=2,318,212 records included in the 1996 mortality data file, a total of 21,290 records (0.9%) lack ICD-10 information. Variables containing ICD-10 codes for these records have missing values and have a value of “Y” on the variable “compflag” (position 441). Thus, records that should be excluded for the analysis of comparability are identified by blank spaces in the variable occupying positions 444-447 (ICD-10 underlying cause code). These records have been retained in the comparability file as part of the original 1996 mortality data in order to provide a means to assess potential selection bias using the characteristics of the records flagged for exclusion.

The lack of ICD-10 information makes these records unsuitable for the analysis of comparability and is due to problems with the ICD-10 processing of these records. There are two reasons why ICD-10 information is not included with the records flagged for exclusion:

1- Original MICAR/SuperMICAR input files which were used for the ICD-10 coding were lost.

2- In some cases, records were initially submitted with cause(s) of death pending investigation or with cause(s) that were later determined to be incorrect. As amendments were received from the States, these records were updated in the final 1996 mortality file and, thus, their ICD-9 underlying causes were classified correctly. However, these amendments were not made to the original MICAR/SuperMICAR input files. Since the ICD-10 coding for these records were produced from non-amended input files, they reflect unknown or incorrect ICD-10 underlying and multiple causes of death that are not compatible with their ICD-9 counterparts.

Use of the ICD-9/ICD-10 comparability file

The ICD-9/ICD-10 comparability file can be used in different ways to assess the impact of the implementation of ICD-10 on mortality statistics. A simple and straightforward method for measuring the extent of discontinuity in cause-of-death trends resulting from the implementation of ICD-10 is to compute “comparability ratios” for cause of death groupings. A comparability ratio for a given cause of death is computed by dividing the number of deaths classified by the new revision by the number of deaths classified by the previous revision. The resulting ratios represent the net effect of the new revision on cause-of-death statistics and can be used with prudence as factors to adjust mortality statistics for causes of death classified by a previous revision to be comparable to rates for the same causes classified by the new revision.

Defining and grouping the ICD codes that make up the cause-of-death titles to be assessed for comparability is a process that needs to be approached with care. NCHS recommends that groupings be based on titles as described in NCHS’ lists of selected causes of death. The latest versions of these lists, however, were constructed using ICD-10 codes (e.g., the List of 113 selected causes of death). These lists were designed to maintain some level of continuity between titles in the previous (ICD-9-based) versions of the lists of selected causes (e.g., the List of 72 selected causes of death) and the current titles. Because comparability ratios are intended to measure the effect of changes in classification and coding rules, it is important to avoid potentially confounding effects of variation in the tabulation lists used for the two revisions. For example, an important cause-of-death category in the List of 72 selected causes (72-cause list) is Accidents and adverse effects. However, in the List of 113 selected causes (113-cause list), accidents are categorized separately from the adverse effects. A comparability ratio for accidents using the 113-cause list category in the numerator and the 72-cause list category in the denominator reflects not only the changes in classification and coding rules, but also the decrease in allocation because the deaths from adverse effects are missing in the 113-cause list category. Further, because of the greater detail in the ICD-10 113-cause list, many categories are not included in the 72-cause list (e.g., Salmonella infections, Malignant neoplasm of pancreas, and Alcoholic liver disease). As a result, it would not be possible to calculate comparability ratios for the causes of death added in ICD-10 under these circumstances. To

address these problems, *ICD-9 codes were assigned to each category in the 113-cause list*. The same has been done for the other cause lists (e.g., ICD-9 codes were assigned to each category in the ICD-10 List of 130 selected causes of infant death).

Tables A and B show the ICD-9 codes assigned to the categories that make up the 113-cause list and the infant (130) cause list, respectively. Sample SAS programs that group records according to their ICD-9 and ICD-10 underlying cause-of-death codes (ICD-9 codes arranged to be comparable to NCHS' lists of 113 selected causes of death and 130 selected causes of infant death) are included with the CD-ROM. These SAS program files are named "Classify_to_113_list.SAS" and "Classify_to_130_list.SAS." Examples of comparability ratios computed using categories as defined by these programs may also be found on this CD-ROM package as an MS Excel file named "Comparability_ratio_tables.XLS."

Table A. Comparable category numbers for 113 selected causes of death according to the Ninth and Tenth Revisions, *International Classification of Diseases*

List number	Cause of death	Category codes according to	
		ICD-10	ICD-9
001	Salmonella infections	A01-A02	002-003
002	Shigellosis and amebiasis	A03,A06	004,006
003	Certain other intestinal infections	A04,A07-A09	007-009
004	Tuberculosis	A16-A19	010-018
005	Respiratory tuberculosis	A16	010-012
006	Other tuberculosis	A17-A19	013-018
007	Whooping cough	A37	033
008	Scarlet fever and erysipelas	A38,A46	034.1-035
009	Meningococcal infection	A39	036
010	Septicemia	A40-A41	038
011	Syphilis	A50-A53	090-097
012	Acute poliomyelitis	A80	045
013	Arthropod-borne viral encephalitis	A83-A84,A85.2	062-064
014	Measles	B05	055
015	Viral hepatitis	B15-B19	070
016	Human immunodeficiency virus (HIV) disease	B20-B24	042-044
017	Malaria	B50-B54	084
018	Other and unspecified infectious and parasitic diseases and their sequelae	A00,A05,A20-A36,A42-A44,A48-A49,A54-A79,A81-A82,A85.0-A85.1,A85.8,A86-B04,B06-B09,B25-B49,B55-B99	001,005,020-032,037,039-041,046-054,056-061,065-066,071-083,085-088,098-134,136,139,771.3
019	Malignant neoplasms	C00-C97	140-208
020	Malignant neoplasms of lip, oral cavity and pharynx	C00-C14	140-149
021	Malignant neoplasm of esophagus	C15	150
022	Malignant neoplasm of stomach	C16	151
023	Malignant neoplasms of colon, rectum and anus	C18-C21	153-154
024	Malignant neoplasms of liver and intrahepatic bile ducts	C22	155
025	Malignant neoplasm of pancreas	C25	157
026	Malignant neoplasm of larynx	C32	161
027	Malignant neoplasms of trachea, bronchus and lung	C33-C34	162
028	Malignant melanoma of skin	C43	172
029	Malignant neoplasm of breast	C50	174-175
030	Malignant neoplasm of cervix uteri	C53	180
031	Malignant neoplasms of corpus uteri and uterus, part unspecified	C54-C55	179,182
032	Malignant neoplasm of ovary	C56	183.0
033	Malignant neoplasm of prostate	C61	185
034	Malignant neoplasms of kidney and renal pelvis	C64-C65	189.0,189.1
035	Malignant neoplasm of bladder	C67	188
036	Malignant neoplasms of meninges, brain and other parts of central nervous system	C70-C72	191-192
037	Malignant neoplasms of lymphoid, hematopoietic and related tissue	C81-C96	200-208
038	Hodgkin's disease	C81	201
039	Non-Hodgkin's lymphoma	C82-C85	200,202
040	Leukemia	C91-C95	204-208
041	Multiple myeloma and immunoproliferative neoplasms	C88,C90	203
042	Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue	C96	- - -
043	All other and unspecified malignant neoplasms	C17,C23-C24,C26-C31,C37-C41,C44-C49,C51-C52,C57-C60,C62-C63,C66,C68-C69,C73-C80,C97	152,156,158-160,163-171,173,181,183.2-184,186-187,189.2-190,193-199
044	In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior	D00-D48	210-239

Table A. Comparable category numbers for 113 selected causes of death according to the Ninth and Tenth Revisions, International Classification of Diseases - Con.

List number	Cause of death	Category codes according to	
		ICD-10	ICD-9
045	Anemias	D50–D64	280–285
046	Diabetes mellitus	E10–E14	250
047	Nutritional deficiencies	E40–E64	260–269
048	Malnutrition	E40–E46	260–263
049	Other nutritional deficiencies	E50–E64	264–269
050	Meningitis	G00,G03	320–322
051	Parkinson's disease	G20–G21	332
052	Alzheimer's disease	G30	331.0
053	Major cardiovascular diseases	I00–I78	390–434,436–448
054	Diseases of heart	I00–I09,I11,I13,I20–I51	390–398,402,404,410–429
055	Acute rheumatic fever and chronic rheumatic heart diseases	I00–I09	390–398
056	Hypertensive heart disease	I11	402
057	Hypertensive heart and renal disease	I13	404
058	Ischemic heart diseases	I20–I25	410–414,429.2
059	Acute myocardial infarction	I21–I22	410
060	Other acute ischemic heart diseases	I24	411
061	Other forms of chronic ischemic heart disease	I20,I25	412–414,429.2
062	Atherosclerotic cardiovascular disease, so described	I25.0	429.2
063	All other forms of chronic ischemic heart disease	I20,I25.1–I25.9	412–414
064	Other heart diseases	I26–I51	415–429.1,429.3–429.9
065	Acute and subacute endocarditis	I33	421
066	Diseases of pericardium and acute myocarditis	I30–I31,I40	420,422–423
067	Heart failure	I50	428
068	All other forms of heart disease	I26–I28,I34–I38,I42–I49,I51	415–417,424–427,429.0–429.1,429.3–429.9
069	Essential (primary) hypertension and hypertensive renal disease	I10,I12	401,403
070	Cerebrovascular diseases	I60–I69	430–434,436–438
071	Atherosclerosis	I70	440
072	Other diseases of circulatory system	I71–I78	441–448
073	Aortic aneurysm and dissection	I71	441
074	Other diseases of arteries, arterioles and capillaries	I72–I78	442–448
075	Other disorders of circulatory system	I80–I99	451–459
076	Influenza and pneumonia	J10–J18	480–487
077	Influenza	J10–J11	487
078	Pneumonia	J12–J18	480–486
079	Other acute lower respiratory infections	J20–J22	466
080	Acute bronchitis and bronchiolitis	J20–J21	466
081	Unspecified acute lower respiratory infection	J22	- - -
082	Chronic lower respiratory diseases	J40–J47	490–494,496
083	Bronchitis, chronic and unspecified	J40–J42	490–491
084	Emphysema	J43	492
085	Asthma	J45–J46	493
086	Other chronic lower respiratory diseases	J44, J47	494,496
087	Pneumoconioses and chemical effects	J60–J66,J68	500–506
088	Pneumonitis due to solids and liquids	J69	507
089	Other diseases of respiratory system	J00–J06,J30–J39,J67,J70–J98	034.0,460–465,470–478,495,508–519

Table A. Comparable category numbers for 113 selected causes of death according to the Ninth and Tenth Revisions, International Classification of Diseases - Con.

List number	Cause of death	Category codes according to	
		ICD-10	ICD-9
090	Peptic ulcer	K25-K28	531-534
091	Diseases of appendix	K35-K38	540-543
092	Hernia	K40-K46	550-553
093	Chronic liver disease and cirrhosis	K70,K73-K74	571
094	Alcoholic liver disease	K70	571.0-571.3
095	Other chronic liver disease and cirrhosis	K73-K74	571.4-571.9
096	Cholelithiasis and other disorders of gallbladder	K80-K82	574-575
097	Nephritis, nephrotic syndrome and nephrosis	N00-N07,N17-N19,N25-N27	580-589
098	Acute and rapidly progressive nephritic and nephrotic syndrome	N00-N01,N04	580-581
099	Chronic glomerulonephritis, nephritis and nephritis not specified as acute or chronic and renal sclerosis unspecified	N02-N03,N05-N07,N26	582-583,587
100	Renal failure	N17-N19	584-586
101	Other disorders of kidney	N25,N27	588-589
102	Infections of kidney	N10-N12,N13.6,N15.1	590
103	Hyperplasia of prostate	N40	600
104	Inflammatory diseases of female pelvic organs	N70-N76	614-616
105	Pregnancy, childbirth and the puerperium	O00-O99	630-676
106	Pregnancy with abortive outcome	O00-O07	630-639
107	Other complications of pregnancy, childbirth and the puerperium	O10-O99	640-676
108	Certain conditions originating in the perinatal period	P00-P96	760-771.2,771.4-779
109	Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99	740-759
110	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R99	780-799
111	All other diseases (Residual)	Residual	Residual
112	Accidents (unintentional injuries)	V01-X59,Y85-Y86	E800-E869,E880-E929
113	Transport accidents	V01-V99,Y85	E800-E848,E929.0,E929.1
114	Motor vehicle accidents	V02-V04,V09.0,V09.2,,V12-V14,V19.0-V19.2,V19.4-V19.6,V20-V79,V80.3-V80.5,V81.0-V81.1,V82.0-V82.1,V83-V86,V87.0-V87.8,V88.0-V88.8,V89.0,V89.2	E810-E825
115	Other land transport accidents	V01,V05-V06,V09.1,V09.3-V09.9,V10-V11,V15-V18,V19.3,V19.8-V19.9,V80.0-V80.2,V80.6-V80.9,V81.2-V81.9,V82.2-V82.9,V87.9,V88.9,V89.1,V89.3,V89.9	E800-E807,E826-E829
116	Water, air and space, and other and unspecified transport accidents and their sequelae	V90-V99,Y85	E830-E848,E929.0,E929.1
117	Nontransport accidents	W00-X59,Y86	E850-E869,E880-E928,E929.2-E929.9
118	Falls	W00-W19	E880-E888
119	Accidental discharge of firearms	W32-W34	E922
120	Accidental drowning and submersion	W65-W74	E910
121	Accidental exposure to smoke, fire and flames	X00-X09	E890-E899
122	Accidental poisoning and exposure to noxious substances	X40-X49	E850-E869,E924.1
123	Other and unspecified nontransport accidents and their sequelae	W20-W31,W35-W64,W75-W99,X10-X39,X50-X59,Y86	E900-E909,E911-E921,E923-E924.0,E924.8-E928,E929.2-E929.9
124	Intentional self-harm (suicide)	X60-X84,Y87.0	E950-E959
125	Intentional self-harm (suicide) by discharge of firearms	X72-X74	E955.0-E955.4
126	Intentional self-harm (suicide) by other and unspecified means and their sequelae	X60-X71,X75-X84,Y87.0	E950-E954,E955.5-E959
127	Assault (homicide)	X85-Y09,Y87.1	E960-E969
128	Assault (homicide) by discharge of firearms	X93-X95	E965.0-E965.4
129	Assault (homicide) by other and unspecified means and their sequelae	X85-X92,X96-Y09,Y87.1	E960-E964,E965.5-E969
130	Legal intervention	Y35,Y89.0	E970-E978
131	Events of undetermined intent	Y10-Y34,Y87.2,Y89.9	E980-E989
132	Discharge of firearms, undetermined intent	Y22-Y24	E985.0-E985.4
133	Other and unspecified events of undetermined intent and their sequelae	Y10-Y21,Y25-Y34,Y87.2,Y89.9	E980-E984,E985.5-E989
134	Operations of war and their sequelae	Y36,Y89.1	E990-E999
135	Complications of medical and surgical care	Y40-Y84,Y88	E870-E879,E930-E949
- - -	No comparable category classified by ICD-9 exists		

Table B. Comparable category numbers for 130 selected causes of infant death according to the Ninth and Tenth Revisions, International Classification of Diseases

List number	Cause of death	Category codes according to	
		ICD-10	ICD-9
001	Certain infectious and parasitic diseases	A00–B99	001–033,034.1–134,136–139,771.3
002	Certain intestinal infectious diseases	A00–A08	001–008
003	Diarrhea and gastroenteritis of infectious origin	A09	009
004	Tuberculosis	A16–A19	010–018
005	Tetanus	A33,A35	037,771.3
006	Diphtheria	A36	032
007	Whooping cough	A37	033
008	Meningococcal infection	A39	036
009	Septicemia	A40–A41	038
010	Congenital syphilis	A50	090
011	Gonococcal infection	A54	098
012	Viral diseases	A80–B34	042–079
013	Acute poliomyelitis	A80	045
014	Varicella (chickenpox)	B01	052
015	Measles	B05	055
016	Human immunodeficiency virus (HIV) disease	B20–B24	042–044
017	Mumps	B26	072
018	Other and unspecified viral diseases	A81–B00,B02–B04,B06–B19,B25,B27–B34	046–051,053–054,056–071,073–079
019	Candidiasis	B37	112
020	Malaria	B50–B54	084
021	Pneumocystosis	B59	136.3
022	All other and unspecified infectious and parasitic diseases	A20–A32,A38,A42–A49,A51–A53,A55–A79,B35–B36,B38–B49,B55–B58,B60–B99	020–031,034.1–035,039–041,080–083,085–088,091–097,099–111,114–134,136.0–136.2,136.4–1
023	Neoplasms	C00–D48	140–239
024	Malignant neoplasms	C00–C97	140–208
025	Hodgkin's disease and non-Hodgkin's lymphomas	C81–C85	200–202
026	Leukemia	C91–C95	204–208
027	Other and unspecified malignant neoplasms	C00–C80,C88–C90,C96–C97	140–199,203
028	In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior	D00–D48	210–239
029	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	D50–D89	135,279–289
030	Anemias	D50–D64	280–285
031	Hemorrhagic conditions and other diseases of blood and blood-forming organs	D65–D76	286–289
032	Certain disorders involving the immune mechanism	D80–D89	135,279
033	Endocrine, nutritional and metabolic diseases	E00–E88	240–278
034	Short stature, not elsewhere classified	E34.3	259.4
035	Nutritional deficiencies	E40–E64	260–269
036	Cystic fibrosis	E84	277.0
037	Volume depletion, disorders of fluid, electrolyte and acid-base balance	E86–E87	276
038	All other endocrine, nutritional and metabolic diseases	E00–E32,E34.0–E34.2,E34.4–E34.9,E65–E83,E85,E88	240–259.3,259.8–259.9,270–275,277.1–278
039	Diseases of the nervous system	G00–G98	320–359,435
040	Meningitis	G00,G03	320–322
041	Infantile spinal muscular atrophy, type I (Werdnig-Hoffman)	G12.0	335.0
042	Infantile cerebral palsy	G80	343
043	Anoxic brain damage, not elsewhere classified	G93.1	348.1
044	Other diseases of nervous system	G04,G06–G11,G12.1–G12.9,G20–G72,G81–G92,G93.0,G93.2–G93.9,G95–G98	323–334,335.1–342,344–348.0,348.2–359,435
045	Diseases of the ear and mastoid process	H60–H93	380–389
046	Diseases of the circulatory system	I00–I99	390–434,436–459
047	Pulmonary heart disease and diseases of pulmonary circulation	I26–I28	415–417
048	Pericarditis, endocarditis and myocarditis	I30,I33,I40	420–422
049	Cardiomyopathy	I42	425
050	Cardiac arrest	I46	427.5
051	Cerebrovascular diseases	I60–I69	430–434,436–438

Table B. Comparable category numbers for 130 selected causes of infant death according to the Ninth and Tenth Revisions, International Classification of Diseases - Con.

List number	Cause of death	Category codes according to	
		ICD-10	ICD-9
053	Diseases of the respiratory system	J00–J98	034.0,460–519
054	Acute upper respiratory infections	J00–J06	034.0,460–465
055	Influenza and pneumonia	J10–J18	480–487
056	Influenza	J10–J11	487
057	Pneumonia	J12–J18	480–486
058	Acute bronchitis and acute bronchiolitis	J20–J21	466
059	Bronchitis, chronic and unspecified	J40–J42	490–491
060	Asthma	J45–J46	493
061	Pneumonitis due to solids and liquids	J69	507
062	Other and unspecified diseases of respiratory system	J22,J30–J39,J43–J44,J47–J68,J70–J98	470–479,492,494–506,508–519
063	Diseases of the digestive system	K00–K92	520–579
064	Gastritis, duodenitis, and noninfective enteritis and colitis	K29,K50–K55	535,555–558
065	Hernia of abdominal cavity and intestinal obstruction without hernia	K40–K46,K56	550–553,560
066	All other and unspecified diseases of digestive system	K00–K28,K30–K38,K57–K92	520–534,536–543,562–579
067	Diseases of the genitourinary system	N00–N98	580–629
068	Renal failure and other disorders of kidney	N17–N19,N25,N27	584–589
069	Other and unspecified diseases of genitourinary system	N00–N15,N20–N23,N26,N28–N98	580–583,590–629
070	Certain conditions originating in the perinatal period	P00–P96	760–771.2,771.4–779
071	Newborn affected by maternal factors and by complications of pregnancy, labor and delivery	P00–P04	760–763
072	Newborn affected by maternal hypertensive disorders	P00.0	760.0
073	Newborn affected by other maternal conditions which may be unrelated to present pregnancy	P00.1–P00.9	760.1–760.6,760.8–760.9
074	Newborn affected by maternal complications of pregnancy	P01	761
075	Newborn affected by incompetent cervix	P01.0	761.0
076	Newborn affected by premature rupture of membranes	P01.1	761.1
077	Newborn affected by multiple pregnancy	P01.5	761.5
078	Newborn affected by other maternal complications of pregnancy	P01.2–P01.4,P01.6–P01.9	761.2–761.4,761.6–761.9
079	Newborn affected by complications of placenta, cord and membranes	P02	762
080	Newborn affected by complications involving placenta	P02.0–P02.3	762.0–762.3
081	Newborn affected by complications involving cord	P02.4–P02.6	762.4–762.6
082	Newborn affected by chorioamnionitis	P02.7	762.7
083	Newborn affected by other and unspecified abnormalities of membranes	P02.8–P02.9	762.8–762.9
084	Newborn affected by other complications of labor and delivery	P03	763.0–763.4,763.6–763.9
085	Newborn affected by noxious influences transmitted via placenta or breast milk	P04	760.7, 763.5
086	Disorders related to length of gestation and fetal malnutrition	P05–P08	764–766
087	Slow fetal growth and fetal malnutrition	P05	764
088	Disorders related to short gestation and low birth weight, not elsewhere classified	P07	765
089	Extremely low birth weight or extreme immaturity	P07.0,P07.2	765.0

Table B. Comparable category numbers for 130 selected causes of infant death according to the Ninth and Tenth Revisions, International Classification of Diseases - Con.

List number	Cause of death	Category codes according to	
		ICD-10	ICD-9
105	Infections specific to the perinatal period	P35–P39	771.0–771.2,771.4–771.8
106	Bacterial sepsis of newborn	P36	771.8
107	Omphalitis of newborn with or without mild hemorrhage	P38	771.4
108	All other infections specific to the perinatal period	P35,P37,P39	771.0–771.2,771.5–771.7
109	Hemorrhagic and hematological disorders of newborn	P50–P61	772–774,776
110	Neonatal hemorrhage	P50–P52,P54	772
111	Hemorrhagic disease of newborn	P53	776.0
112	Hemolytic disease of newborn due to isoimmunization and other perinatal jaundice	P55–P59	773–774
113	Hematological disorders	P60–P61	776.1–776.9
114	Syndrome of infant of a diabetic mother and neonatal diabetes mellitus	P70.0–P70.2	775.0–775.1
115	Necrotizing enterocolitis of newborn	P77	777.5
116	Hydrops fetalis not due to hemolytic disease	P83.2	778.0
117	Other perinatal conditions	P29,P70.3–P76,P78–P81,P83.0–P83.1, P83.3–P96	775.2–775.9,777.0–777.4,777.6–777.9, 778.1–779
118	Congenital malformations, deformations and chromosomal abnormalities	Q00–Q99	740–759
119	Anencephaly and similar malformations	Q00	740
120	Congenital hydrocephalus	Q03	742.3
121	Spina bifida	Q05	741
122	Other congenital malformations of nervous system	Q01–Q02,Q04,Q06–Q07	742.0–742.2,742.4–742.9
123	Congenital malformations of heart	Q20–Q24	745–746
124	Other congenital malformations of circulatory system	Q25–Q28	747
125	Congenital malformations of respiratory system	Q30–Q34	748
126	Congenital malformations of digestive system	Q35–Q45	749–751
127	Congenital malformations of genitourinary system	Q50–Q64	752–753
128	Congenital malformations and deformations of musculoskeletal system, limbs and integument	Q65–Q85	754–757
129	Down's syndrome	Q90	758.0
130	Edward's syndrome	Q91.0–Q91.3	758.2
131	Patau's syndrome	Q91.4–Q91.7	758.1
132	Other congenital malformations and deformations	Q10–Q18,Q86–Q89	743–744,759
133	Other chromosomal abnormalities, not elsewhere classified	Q92–Q99	758.3–758.9
134	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00–R99	780–799
135	Sudden infant death syndrome	R95	798.0
136	Other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00–R53,R55–594,R96–R99	780–796,798.1–799
137	All other diseases (Residual)	F01–F99,H00–H57,L00–M99	290–319,360–379,680–739
138	External causes of mortality	V01–Y84	E800–E989
139	Accidents (unintentional injuries)	V01–X59	E800–E869,E880–E929
140	Transport accidents	V01–V99	E800–E848,E920–E929.1
141	Motor vehicle accidents	V02–V04,V09.0,V09.2,V12–V14,V19.0–V19.2, V19.4–V19.6,V20–V79,V80.3–V80.5, V81.0–V81.1,V82.0–V82.1,V83–V86, V87.0–V87.8,V88.0–V88.8,V89.0,V89.2	E810–E825
142	Other and unspecified transport accidents	V01,V05–V06,V09.1,V09.3–V09.9,V10–V11, V15–V18,V19.3,V19.8,V19.9,V80.0–V80.2, V80.6–V80.9,V81.2–V81.9,V82.2–V82.9,V87.9, V88.9,V89.1,V89.3,V89.9,V90–V99	E800–E807,E826–E848,E929.0–E929.1
143	Falls	W00–W19	E880–E888
144	Accidental discharge of firearms	W32–W34	E922
145	Accidental drowning and submersion	W65–W74	E910

A detailed guide describing use and application of comparability ratios was released to the public as “A Guide to State Implementation of ICD-10 for Mortality, Part II: Applying Comparability Ratios.” This document is included electronically as part of this CD-ROM package under the name “CR_application_sate_guide.pdf.” An example (not included on the State Guide) on how to statistically compare the age-adjusted death rates of Malignant neoplasm between 1998 and 1999 follows on tables C and D below...

Step 1 – Computing the age-adjusted and comparability-modified death rate for the year under ICD-9 convention, plus its relative standard error (RSE)

Table C. Age-specific death rates for Malignant neoplasms, United States, 1998, as per ICD-9 codes arranged to be comparable to ICD-10 listing

Age group	Age-specific deaths	Age-specific death rate	RSE of age-specific death rate	Age-specific comparability ratio	RSE of age-specific comparability ratio	RSE of age-specific ratio X death rate	Proportion distribution U.S. Standard population	Weighted age-specific rates
under 1 year	78	2.1	11.3228	1.0814	5.3623	12.5431	0.013818	0.0310
1-4 years	365	2.4	5.2342	1.0116	1.7453	5.5183	0.055317	0.1328
5-14 years	1013	2.5	3.1419	1.0251	0.8529	3.2557	0.145565	0.3748
15-24 years	1699	4.5	2.4261	1.0219	0.5587	2.4896	0.138646	0.6334
25-34 years	4385	10.8	1.5101	0.9773	0.3574	1.5519	0.135573	1.4255
35-44 years	17022	38.0	0.7665	0.9921	0.1592	0.7828	0.162613	6.1369
45-54 years	45747	129.8	0.4675	1.0025	0.0661	0.4722	0.134834	17.5520
55-64 years	87024	378.2	0.3390	1.0057	0.0430	0.3417	0.087247	33.1822
65-74 years	154753	833.3	0.2542	1.0072	0.0321	0.2562	0.066037	55.4282
75-84 years	158517	1319.2	0.2512	1.0119	0.0388	0.2541	0.044842	59.8602
85 years and over	70916	1758.6	0.3755	1.0235	0.0736	0.3827	0.015508	27.9120
Age-adjusted and comparability-modified death rate =								202.6689

Unlike other listed causes, the ICD-9 codes that define the Malignant neoplasms grouping did not require rearranging to be comparable to the grouping as defined by the new ICD-10 list of 113 selected causes of death. ICD-9 codes making up the Malignant neoplasm group for this table are identical to those used under the ICD-9-based 72-cause list. Differences in population estimates due to intercensal revision of estimates for years 1991-1999 may account for some differences between rates shown here and those shown in previous reports (compare with figures shown in the final report on deaths for 1998) (3). Numbers of deaths, however, remain as published.

Sample programs that may be used to group deaths using their ICD-9 underlying cause-of-death codes (arranged to be comparable to NCHS' lists of 113 selected causes of death and 130 selected causes of infant death) have been included as part of this CD-ROM package. These SAS program files are named “Classify_to_113_list.SAS” and “Classify_to_130_list.SAS.”

Relative standard errors (RSEs) have been computed for the age-specific death rates, comparability ratios, and for the product of both of these. Formulas used to produce error estimates for the age-specific death rates and for the product of the rate and the comparability ratio are respectively given in the “Guide to State implementation” as formulas number 2 and number 5 and are shown below.

Formula 2: RSE for age-specific and crude death rates

$$RSE(R) = 100\sqrt{\frac{1}{D}}$$

Formula 5: RSE for the product of each age-specific comparability ratio x death rate

$$RSE(C \bullet R) = 100\sqrt{\left(\frac{RSE(R)}{100}\right)^2 + \left(\frac{RSE(C)}{100}\right)^2 \left[1 + \left(\frac{RSE(R)}{100}\right)^2\right]}$$

Where:

R = age-specific death rate for the given cause and age group

D = number of deaths for the given cause and age group

C = age-specific comparability ratio for the given cause and age group

The procedure used to compute the RSE for each age-specific comparability ratio is shown in the preliminary bridge coding report (4) published by England and Wales' Office of National Statistics. This procedure follows...

$$RSE(C) = \sqrt{\text{var}(\log T) + \text{var}(\log B) - 2 \text{cov}(\log T, \log B)} \times 100$$

Where:

$$\text{var}(\log T) = \frac{\text{var}(T)}{T^2}$$

$$\text{var}(\log B) = \frac{\text{var}(B)}{B^2}$$

$$\text{cov}(\log T, \log B) = \frac{\text{cov}(T, B)}{TB}$$

C = comparability ratio

T = number of deaths in ICD-10

B = number of deaths in ICD-9

$$\text{var}(T) = n(p_3(1-p_3))$$

$$\text{var}(B) = n(p_2(1-p_2))$$

$$\text{cov}(T, B) = -n(p_3p_2)$$

Where:

n = total number of deaths coded to given cause in ICD-9 or ICD-10

p_2 = proportion of deaths coded to given cause in ICD-10 but not ICD-9

p_3 = proportion of deaths coded to given cause in ICD-9 but not ICD-10

The resulting RSEs are comparable to those obtained by using SUDAAN's PROC RATIO procedure (used to compute RSEs for the comparability ratios shown in the U.S. preliminary comparability report). The method used in the British study was chosen for its relative simplicity of calculation.

Once these values are obtained for each age group, their cumulative values are processed as per formula 6 to obtain a relative standard error for the age-adjusted and comparability-modified 1998 death rate for Malignant

neoplasms.

Formula 6: RSE for age-adjusted and comparability-modified death rate

$$RSE(R'') = 100 \frac{\sqrt{\sum \left[\left(w_i^2 (C_i R_i)^2 \cdot \left(\frac{RSE(C_i R_i)}{100} \right)^2 \right) \right]}}{R''}$$

Where:

R'' = age-adjusted and comparability-modified death rate; in this example $R'' = 202.67$

w_i = age-specific standard population weight proportion for i^{th} age group.

C_i = age-specific comparability ratio for i^{th} age group.

R_i = age-specific death rate for i^{th} age group.

For the current example, $RSE(R'') = 0.1375$.

Step 2 – Computing the age-adjusted death rate for the year under ICD-10 convention, plus its relative standard error (RSE)

Table D. Age-specific death rates for Malignant neoplasms, United States, 1999, as per ICD-10 codes shown in NCHS' ICD-10-based list of 113 selected causes of death

Age group	Age-specific deaths	Age-specific death rate	RSE of age-specific death rate	Proportion distribution U.S. Standard population	Weighted age-specific rates
under 1 year	68	1.8	12.1268	0.013818	0.0248
1-4 years	418	2.7	4.8912	0.055317	0.1507
5-14 years	1012	2.5	3.1435	0.145565	0.3609
15-24 years	1724	4.5	2.4084	0.138646	0.6180
25-34 years	4005	10.0	1.5802	0.135573	1.3514
35-44 years	16732	37.1	0.7731	0.162613	6.0360
45-54 years	46681	127.6	0.4628	0.134834	17.2077
55-64 years	89067	374.6	0.3351	0.087247	32.6807
65-74 years	152338	827.1	0.2562	0.066037	54.6175
75-84 years	162770	1331.5	0.2479	0.044842	59.7054
85 years and over	75014	1805.8	0.3651	0.015508	28.0046
Age-adjusted death rate =					200.7577

The RSE of the (ICD-10) 1999 age-adjusted death rate for Malignant neoplasm may be computed using standard formulations.

Formula 4: RSE for age-adjusted death rate based on ICD-10 revision (not comparability-modified)

$$RSE(R') = 100 \frac{\sqrt{\sum \left[w_i^2 \cdot R_i^2 \left(\frac{1}{D_i} \right) \right]}}{R'}$$

Where:

R' = age-adjusted death rate for the given cause of death, based on ICD-10; in this example, $R' = 200.76$

D_i = number of deaths for the i th. age group attributed to the given cause of interest according to ICD-10

For the current example, $RSE(R') = 0.1349$.

Having error estimates for both rates allows us to use a statistical test based on the standard normal distribution against the null hypothesis $Rate_{1998} = Rate_{1999}$. The formula for such a test follows...

Formula 10: Z-test for $H_0: R'' - R' = 0$

$$Z = \frac{R'' - R'}{\sqrt{R''^2 \left(\frac{RSE(R'')}{100} \right)^2 + R'^2 \left(\frac{RSE(R')}{100} \right)^2}}$$

The net difference between the death rates is of 1.91 deaths per 100,000 standard population. This results in $Z = 4.92$; a p-value of less than 0.0001. Thus, the null hypothesis of no difference is rejected and we conclude that there was a significant decrease in the risk of cancer mortality between 1998 and 1999, taking into account implementation of ICD-10.

List of File Data Elements and Tape Locations

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1.	General	
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	c. Month of Death	55-56
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	e. Day of week of death	83
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	b. Expanded State	29-30
	c. County	23-25
	d. County Population size	49
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	f. Division	27
	g. FIPS State	119-120
	h. FIPS County	121-123
3.	Residence	
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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>																					
1-18	18	<u>Reserved Positions</u> These positions are blank.																					
19	1	<u>Record Type</u> <table border="0" style="margin-left: 20px;"> <tr> <td>1</td> <td>...</td> <td>RESIDENTS State and County of Occurrence and Residence are the same.</td> </tr> <tr> <td>2</td> <td>...</td> <td>NONRESIDENTS State and/or County of Occurrence and Residence are different.</td> </tr> </table>	1	...	RESIDENTS State and County of Occurrence and Residence are the same.	2	...	NONRESIDENTS State and/or County of Occurrence and Residence are different.															
1	...	RESIDENTS State and County of Occurrence and Residence are the same.																					
2	...	NONRESIDENTS State and/or County of Occurrence and Residence are different.																					
20	1	<u>Resident Status</u> <p>United States Occurrence</p> <table border="0" style="margin-left: 20px;"> <tr> <td>1</td> <td>...</td> <td>RESIDENTS State and County of Occurrence and Residence are the same.</td> </tr> <tr> <td>2</td> <td>...</td> <td>INTRASTATE NONRESIDENTS State of Occurrence and Residence are the same, but County is different.</td> </tr> <tr> <td>3</td> <td>...</td> <td>INTERSTATE NONRESIDENTS State of Occurrence and Residence are different, but both are in the U.S.</td> </tr> <tr> <td>4</td> <td>...</td> <td>FOREIGN RESIDENTS State of Occurrence is one of the 50 States or the District of Columbia, but Place of Residence is outside of the U.S.</td> </tr> </table> <p>Puerto Rico Occurrence</p> <table border="0" style="margin-left: 20px;"> <tr> <td>1</td> <td>...</td> <td>RESIDENTS Territory and County-equivalent of Occurrence and Residence are the same.</td> </tr> <tr> <td>2</td> <td>...</td> <td>INTRASTATE NONRESIDENTS Territory of Occurrence and Residence are the same, but County-equivalent is different.</td> </tr> <tr> <td>4</td> <td>...</td> <td>FOREIGN RESIDENTS Occurred in Puerto Rico to a resident of any other place.</td> </tr> </table>	1	...	RESIDENTS State and County of Occurrence and Residence are the same.	2	...	INTRASTATE NONRESIDENTS State of Occurrence and Residence are the same, but County is different.	3	...	INTERSTATE NONRESIDENTS State of Occurrence and Residence are different, but both are in the U.S.	4	...	FOREIGN RESIDENTS State of Occurrence is one of the 50 States or the District of Columbia, but Place of Residence is outside of the U.S.	1	...	RESIDENTS Territory and County-equivalent of Occurrence and Residence are the same.	2	...	INTRASTATE NONRESIDENTS Territory of Occurrence and Residence are the same, but County-equivalent is different.	4	...	FOREIGN RESIDENTS Occurred in Puerto Rico to a resident of any other place.
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4	...	FOREIGN RESIDENTS Occurred in Puerto Rico to a resident of any other place.																					

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
20	1	<u>Resident Status - Con.</u>

Virgin Islands Occurrence

- | | | |
|---|-----|--|
| 1 | ... | RESIDENTS
Territory and County-equivalent of Occurrence and Residence are the same. |
| 2 | ... | INTRASTATE NONRESIDENTS
Territory of Occurrence and Residence are the same, but County-equivalent is different. |
| 4 | ... | FOREIGN RESIDENTS
Occurred in Virgin Islands to a resident of any other place. |

Guam Occurrence

- | | | |
|---|-----|--|
| 1 | ... | RESIDENTS
Occurred in Guam to a resident of Guam or to a resident of the U.S. |
| 4 | ... | FOREIGN RESIDENTS
Occurred in Guam to a resident of any place other than Guam or the U.S. |

American Samoa Occurrence

- | | | |
|---|-----|--|
| 1 | ... | RESIDENTS
Territory and County-equivalent of Occurrence and Residence are the same. |
| 2 | ... | INTRASTATE NONRESIDENTS
Territory of Occurrence and Residence are the same, but County-equivalent is different. |
| 4 | ... | FOREIGN RESIDENTS
Occurred in American Samoa to a resident of any other place. |

Northern Marianas Occurrence

- | | | |
|---|-----|--|
| 1 | ... | RESIDENTS
Territory and County-equivalent of Occurrence and Residence are the same. |
| 2 | ... | INTRASTATE NONRESIDENTS
Territory of Occurrence and Residence are the same, but County-equivalent is different. |
| 4 | ... | FOREIGN RESIDENTS
Occurred in Northern Marianas to a resident of any other place. |

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
21-30	10	<p><u>PLACE OF OCCURRENCE</u></p> <p>Refer to the Geographic Code Outline in Mcod96.pdf for a detailed list of areas and codes. Some Geographic Codes have changed to reflect the results of the 1990 Census.</p>
21-22	2	<p><u>State of Occurrence</u></p> <p>United States</p> <p>01 ... Alabama</p> <p>02 ... Alaska</p> <p>03 ... Arizona</p> <p>04 ... Arkansas</p> <p>05 ... California</p> <p>06 ... Colorado</p> <p>07 ... Connecticut</p> <p>08 ... Delaware</p> <p>09 ... District of Columbia</p> <p>10 ... Florida</p> <p>11 ... Georgia</p> <p>12 ... Hawaii</p> <p>13 ... Idaho</p> <p>14 ... Illinois</p> <p>15 ... Indiana</p> <p>16 ... Iowa</p> <p>17 ... Kansas</p> <p>18 ... Kentucky</p> <p>19 ... Louisiana</p> <p>20 ... Maine</p> <p>21 ... Maryland</p> <p>22 ... Massachusetts</p> <p>23 ... Michigan</p> <p>24 ... Minnesota</p> <p>25 ... Mississippi</p> <p>26 ... Missouri</p> <p>27 ... Montana</p> <p>28 ... Nebraska</p> <p>29 ... Nevada</p> <p>30 ... New Hampshire</p> <p>31 ... New Jersey</p> <p>32 ... New Mexico</p> <p>33 ... New York</p> <p>34 ... North Carolina</p> <p>35 ... North Dakota</p> <p>36 ... Ohio</p> <p>37 ... Oklahoma</p> <p>38 ... Oregon</p> <p>39 ... Pennsylvania</p>

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
21-22	2	<u>State of Occurrence - Con.</u> 40 ... Rhode Island 41 ... South Carolina 42 ... South Dakota 43 ... Tennessee 44 ... Texas 45 ... Utah 46 ... Vermont 47 ... Virginia 48 ... Washington 49 ... West Virginia 50 ... Wisconsin 51 ... Wyoming Puerto Rico 52 ...Puerto Rico Virgin Islands 53 ...Virgin Islands Guam 54 ...Guam American Samoa 61 ...American Samoa Northern Marianas 62 ...Northern Marianas
23-25	3	<u>County of Occurrence</u> 001-nnn ... Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. (Note: To uniquely identify a county, both the State and county codes must be used.) A complete list of counties is shown in the Geographic Code Outline on Mcod96.pdf.

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
26	1	<u>Region</u>
27-28	2	<u>Division and State Subcode of Occurrence</u>
States are coded within Division. 26 is Region. 27 is Division. 28 is State subcode.		
000	...	Not applicable: Puerto Rico, Virgin Islands, Guam, or American Samoa occurrence.
1	...	<u>NORTHEAST</u>
1	...	<u>New England</u>
1	...	Maine
2	...	New Hampshire
3	...	Vermont
4	...	Massachusetts
5	...	Rhode Island
6	...	Connecticut
2	...	<u>Middle Atlantic</u>
1	...	New York
2	...	New Jersey
3	...	Pennsylvania
2	...	<u>MIDWEST</u>
3	...	<u>East North Central</u>
1	...	Ohio
2	...	Indiana
3	...	Illinois
4	...	Michigan
5	...	Wisconsin
4	...	<u>West North Central</u>
1	...	Minnesota
2	...	Iowa
3	...	Missouri
4	...	North Dakota
5	...	South Dakota
6	...	Nebraska
7	...	Kansas
3	...	<u>SOUTH</u>
5	...	<u>South Atlantic</u>
1	...	Delaware
2	...	Maryland
3	...	District of Columbia
4	...	Virginia
5	...	West Virginia
6	...	North Carolina
7	...	South Carolina
8	...	Georgia
9	...	Florida

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
26	1	<u>Region</u>
27-28	2	<u>Division and State Subcode of Occurrence - Con.</u>
	6	... <u>East South Central</u>
	1	... Kentucky
	2	... Tennessee
	3	... Alabama
	4	... Mississippi
	7	... <u>West South Central</u>
	1	... Arkansas
	2	... Louisiana
	3	... Oklahoma
	4	... Texas
	4	... <u>WEST</u>
	8	... <u>Mountain</u>
	1	... Montana
	2	... Idaho
	3	... Wyoming
	4	... Colorado
	5	... New Mexico
	6	... Arizona
	7	... Utah
	8	... Nevada
	9	... <u>Pacific</u>
	1	... Washington
	2	... Oregon
	3	... California
	4	... Alaska
	5	... Hawaii

29-30 2 Expanded State of Occurrence Code

This item is designed to separately identify New York City records from other New York State records.

United States

- 01 ... Alabama
- 02 ... Alaska
- 03 ... Arizona
- 04 ... Arkansas
- 05 ... California
- 06 ... Colorado
- 07 ... Connecticut
- 08 ... Delaware
- 09 ... District of Columbia
- 10 ... Florida
- 11 ... Georgia

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
29-30	2	<u>Expanded State of Occurrence - Con.</u>
	12	... Hawaii
	13	... Idaho
	14	... Illinois
	15	... Indiana
	16	... Iowa
	17	... Kansas
	18	... Kentucky
	19	... Louisiana
	20	... Maine
	21	... Maryland
	22	... Massachusetts
	23	... Michigan
	24	... Minnesota
	25	... Mississippi
	26	... Missouri
	27	... Montana
	28	... Nebraska
	29	... Nevada
	30	... New Hampshire
	31	... New Jersey
	32	... New Mexico
	33	... New York
	34	... New York City
	35	... North Carolina
	36	... North Dakota
	37	... Ohio
	38	... Oklahoma
	39	... Oregon
	40	... Pennsylvania
	41	... Rhode Island
	42	... South Carolina
	43	... South Dakota
	44	... Tennessee
	45	... Texas
	46	... Utah
	47	... Vermont
	48	... Virginia
	49	... Washington
	50	... West Virginia
	51	... Wisconsin
	52	... Wyoming
		Puerto Rico
	53	... Puerto Rico
		Virgin Islands
	54	...Virgin Islands

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
29-30	2	<u>Expanded State of Occurrence - Con.</u> Guam 55 ... Guam American Samoa 62 ...American Samoa Northern Marianas 63 ...Northern Marianas
31-48	18	<u>PLACE OF RESIDENCE</u> Refer to the Geographic Code Outline in Mcod96.pdf for a detailed list of areas and codes.
31-32	2	<u>State of Residence</u> United States Occurrence 01 ... Alabama 02 ... Alaska 03 ... Arizona 04 ... Arkansas 05 ... California 06 ... Colorado 07 ... Connecticut 08 ... Delaware 09 ... District of Columbia 10 ... Florida 11 ... Georgia 12 ... Hawaii 13 ... Idaho 14 ... Illinois 15 ... Indiana 16 ... Iowa 17 ... Kansas 18 ... Kentucky 19 ... Louisiana 20 ... Maine 21 ... Maryland 22 ... Massachusetts 23 ... Michigan 24 ... Minnesota 25 ... Mississippi 26 ... Missouri 27 ... Montana 28 ... Nebraska 29 ... Nevada

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
31-32	2	<u>State of Residence - Con.</u> U.S. Occurrence
	30	... New Hampshire
	31	... New Jersey
	32	... New Mexico
	33	... New York
	34	... North Carolina
	35	... North Dakota
	36	... Ohio
	37	... Oklahoma
	38	... Oregon
	39	... Pennsylvania
	40	... Rhode Island
	41	... South Carolina
	42	... South Dakota
	43	... Tennessee
	44	... Texas
	45	... Utah
	46	... Vermont
	47	... Virginia
	48	... Washington
	49	... West Virginia
	50	... Wisconsin
	51	... Wyoming
	52-57,59,61	... Foreign residents
	52	... Puerto Rico
	53	... Virgin Islands
	54	... Guam
	55	... Canada
	56	... Cuba
	57	... Mexico
	59	... Remainder of the world
	61	... American Samoa
	62	... Northern Marianas

Puerto Rico Occurrence

52 ... Puerto Rico
01-51,53-
57,59,61... Foreign residents: refer to U.S. for specific code structure.

Virgin Islands Occurrence

53 ... Virgin Islands
01-52,54-
57,59,61... Foreign residents: refer to U.S. for specific code structure.

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
31-32	2	<p><u>State of Residence - Con.</u> U.S. Occurrence</p> <p>Guam Occurrence</p> <p>54 ... Guam 01-51 ... U.S. resident. Also considered a resident of Guam. 52-53,55-57, 59,61 ... Foreign residents: refer to U.S. for specific code structure.</p> <p>American Samoa Occurrence</p> <p>61 ... American Samoa 01-57, 59 ... Foreign residents: refer to U.S. for specific code structure.</p> <p>Northern Marianas Occurrence</p> <p>62 ... Northern Marianas 01-57, 59,61 ... Foreign residents: refer to U.S. for specific code structure.</p>
33-35	3	<p><u>County of Residence</u></p> <p>001-nnn ...Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State. (Note: to uniquely identify a county, both the State and county codes must be used.) A complete list of counties is shown in the Geographic Code outline in Mcod96.pdf.</p> <p>zzz ...Foreign residents</p>
36-38	3	<p><u>City of Residence</u></p> <p>001-nnn ...Cities are numbered alphabetically within each State and identify each city with a population of 10,000 or more in 1990. (Note: To uniquely identify a city, both the State and city codes must be used. State, county and city codes may also be used.)</p> <p>999 ...balance of county ZZZ ...Foreign residents</p>

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
39	1	<p><u>Population Size of City of Residence</u></p> <p>Based on the results of the 1990 Census.</p> <p>0 ...Place of 1,000,000 or more 1 ...Place of 500,000 to 1,000,000 2 ...Place of 250,000 to 500,000 3 ...Place of 100,000 to 250,000 9 ...All other areas in the U.S. Z ...Foreign residents</p>
40	1	<p><u>Metropolitan - Nonmetropolitan County of Residence</u></p> <p>NOTE: American Samoa, Guam and the Virgin Islands do not have any metropolitan areas.</p> <p>1 ...Metropolitan county 2 ...Nonmetropolitan county Z ...Foreign residents</p>
41 42-43	1 2	<p><u>Region</u> <u>Division and State Subcode of Residence</u></p> <p>States are codes within Division. 41 is Region. 42 is Division. 43 is State subcode. APPLICABLE TO U.S. ONLY.</p> <p>000 ... Foreign residents 1 ... <u>NORTHEAST</u> 1 ... <u>New England</u> 1 ... Maine 2 ... New Hampshire 3 ... Vermont 4 ... Massachusetts 5 ... Rhode Island 6 ... Connecticut 2 ... <u>Middle Atlantic</u> 1 ... New York 2 ... New Jersey 3 ... Pennsylvania 2 ... <u>MIDWEST</u> 3 ... <u>East North Central</u> 1 ... Ohio 2 ... Indiana 3 ... Illinois 4 ... Michigan 5 ... Wisconsin</p>

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
41-43	3	Region <u>Division and State of Residence - Con.</u>
	4	... <u>West North Central</u>
	1	... Minnesota
	2	... Iowa
	3	... Missouri
	4	... North Dakota
	5	... South Dakota
	6	... Nebraska
	7	... Kansas
	3	... <u>SOUTH</u>
	5	... <u>South Atlantic</u>
	1	... Delaware
	2	... Maryland
	3	... District of Columbia
	4	... Virginia
	5	... West Virginia
	6	... North Carolina
	7	... South Carolina
	8	... Georgia
	9	... Florida
	6	... <u>East South Central</u>
	1	... Kentucky
	2	... Tennessee
	3	... Alabama
	4	... Mississippi
	7	... <u>West South Central</u>
	1	... Arkansas
	2	... Louisiana
	3	... Oklahoma
	4	... Texas
	4	... <u>WEST</u>
	8	... <u>Mountain</u>
	1	... Montana
	2	... Idaho
	3	... Wyoming
	4	... Colorado
	5	... New Mexico
	6	... Arizona
	7	... Utah
	8	... Nevada
	9	... <u>Pacific</u>
	1	... Washington
	2	... Oregon
	3	... California
	4	... Alaska
	5	... Hawaii

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
44-45	2	<u>Expanded State of Residence Code</u>

This item is designed to separately identify New York City records from other New York State records.

United States Occurrence

01	... Alabama
02	... Alaska
03	... Arizona
04	... Arkansas
05	... California
06	... Colorado
07	... Connecticut
08	... Delaware
09	... District of Columbia
10	... Florida
11	... Georgia
12	... Hawaii
13	... Idaho
14	... Illinois
15	... Indiana
16	... Iowa
17	... Kansas
18	... Kentucky
19	... Louisiana
20	... Maine
21	... Maryland
22	... Massachusetts
23	... Michigan
24	... Minnesota
25	... Mississippi
26	... Missouri
27	... Montana
28	... Nebraska
29	... Nevada
30	... New Hampshire
31	... New Jersey
32	... New Mexico
33	... New York
34	... New York City
35	... North Carolina
36	... North Dakota
37	... Ohio
38	... Oklahoma
39	... Oregon
40	... Pennsylvania
41	... Rhode Island
42	... South Carolina

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
44-45	2	<u>Expanded State of Residence Code - Con.</u>
		43 ... South Dakota
		44 ... Tennessee
		45 ... Texas
		46 ... Utah
		47 ... Vermont
		48 ... Virginia
		49 ... Washington
		50 ... West Virginia
		51 ... Wisconsin
		52 ... Wyoming
		53-58, 60, 62 ... Foreign Residents
		53 ... Puerto Rico
		54 ... Virgin Island
		55 ... Guam
		56 ... Canada
		57 ... Cuba
		58 ... Mexico
		60 ... Remainder of the world
		62 ... American Samoa

Puerto Rico Occurrence

53 ... Puerto Rico
 01-52, 54-58,60,62 ... Foreign residents: refer to U.S. for specific code structure.

Virgin Islands Occurrence

54 ... Virgin Islands
 01-53,55-58,60,62 ... Foreign residents: refer to U.S. for specific code structure.

Guam Occurrence

55 ... Guam
 01-52 ... U.S. resident. Also considered a resident of Guam.
 53-54, 56-58, 60,62 ... Foreign residents: refer to U.S. for specific code structure.

American Samoa Occurrence

62 ... American Samoa
 01-58, 60 ... Foreign residents: refer to U.S. for specific code structure.

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
44-45	2	<p><u>Expanded State of Residence - Con.</u></p> <p>Northern Marianas Occurrence</p> <p>63 ... Northern Marianas 01-58, 60,62 ... Foreign residents: refer to U.S. for specific code structure.</p>
46-48	3	<p><u>NCHS PMSA/MSA of Residence</u></p> <p>Primary Metropolitan Statistical Areas and Metropolitan Statistical Areas are those defined by the U.S. Office of Management and Budget (OMB) as of 1990. For New England, the New England County Metropolitan Areas (NECMA) are used.</p> <p>In Mcod96.pdf is a list of PMSA's, MSA's, NECMA's, and their component counties.</p> <p>000 ... Nonmetropolitan counties 001-311 ... Code range 999 ... Area of less than 100,000 population ZZZ ... Foreign residents</p>
49	1	<p><u>Population Size of County of Occurrence</u></p> <p>Based on the results of the 1990 Census</p> <p>0 ... County of 1,000,000 or more 1 ... County of 500,000 to 1,000,000 2 ... County of 250,000 to 500,000 3 ... County of 100,000 to 250,000 9 ... County of less than 100,000</p>
50	1	<p><u>Population Size of County of Residence</u></p> <p>Based on the results of the 1990 Census</p> <p>0 ... County of 1,000,000 or more 1 ... County of 500,000 to 1,000,000 2 ... County of 250,000 to 500,000 3 ... County of 100,000 to 250,000 9 ... County of less than 100,000 Z ... Foreign residents</p>

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
51	1	<p><u>PMSA/MSA Population Size</u></p> <p>Based on the results of the 1990 Census</p> <p>1 ... Area of 250,000 or more 2 ... Area of 100,000 to 250,000 9 ... Area of less than 100,000 or nonmetropolitan area Z ... Foreign residents</p>
52-53	2	<p><u>Education</u></p> <p>00 ... No formal education 01-08 ... Years of elementary school 09 ... 1 year of high school 10 ... 2 years of high school 11 ... 3 years of high school 12 ... 4 years of high school 13 ... 1 year of college 14 ... 2 years of college 15 ... 3 years of college 16 ... 4 years of college 17 ... 5 or more years of college 99 ... Not stated</p>
54	1	<p><u>Education Recode</u></p> <p>1 ... 0 - 8 years 2 ... 9 - 11 years 3 ... 12 years 4 ... 13 - 15 years 5 ... 16 years or more 6 ... Not stated</p>
55-56	2	<p><u>Month of Death</u></p> <p>01 ... January 02 ... February 03 ... March 04 ... April 05 ... May 06 ... June 07 ... July 08 ... August 09 ... September 10 ... October 11 ... November 12 ... December</p>

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
57-58	2	<u>Reserved Positions</u>
59	1	<u>Sex</u>
	1	... Male
	2	... Female
60-63	4	<u>RACE</u>
60-61	2	<u>Detail Race</u>

United States Occurrence

Beginning with 1992 data, some areas started reporting additional Asian or Pacific Islander codes for race. Codes 18 - 68 replace old code 08 for these areas. Code 78 replaces old 08 for all other areas. For consistency with Census races, code 09 (all other races) has been imputed.

01	... White
02	... Black
03	... American Indian (includes Aleuts and Eskimos)
04	... Chinese
05	... Japanese
06	... Hawaiian (includes Part-Hawaiian)
07	... Filipino
18	... Asian Indian
28	... Korean
38	... Samoan
48	... Vietnamese
58	... Guamanian
68	... Other Asian or Pacific Islander in areas reporting codes 18-58
78	... Combined other Asian or Pacific Islander, includes codes 18-68 for areas that do not report them separately

Puerto Rico Occurrence

00	... Other races
01	... White
02	... Black

Virgin Islands Occurrence

01	... White
02	... Black
03	... American Indian (includes Aleuts and Eskimos)
04	... Chinese
05	... Japanese
06	... Hawaiian (includes Part-Hawaiian)
07	... Filipino
08	... Other Asian or Pacific Islander

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
60-61	2	<u>Detail Race - Con.</u> Guam Occurrence 01 ... White 02 ... Black 03 ... American Indian (Includes Aleuts and Eskimos) 04 ... Chinese 05 ... Japanese 06 ... Hawaiian (includes Part-Hawaiian) 07 ... Filipino 08 ... Other Asian or Pacific Islander 58 ... Guamanian American Samoa Occurrence 01 ... White 02 ... Black 03 ... American Indian (includes Aleuts and Eskimos) 04 ... Chinese 05 ... Japanese 06 ... Hawaiian (includes Part-Hawaiian) 07 ... Filipino 08 ... Other Asian or Pacific Islander Northern Marianas Occurrence 01 ... White 02 ... Black 03 ... American Indian (includes Aleuts and Eskimos) 04 ... Chinese 05 ... Japanese 06 ... Hawaiian (includes Part-Hawaiian) 07 ... Filipino 18 ... Asian Indian 28 ... Korean 38 ... Samoan 48 ... Vietnamese 58 ... Guamanian 68 ... Other Asian or Pacific Islander in areas reporting codes 18-58 78 ... Combined other Asian or Pacific Islander, includes 18-68 for areas that do not report them separately
62	1	<u>Race Recode 3</u> 1 ... White 2 ... Races other than White or Black 3 ... Black

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
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63	1	<u>Race Recode 2</u> 1 ... White 2 ... All other races
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64-74	11	<u>REPORTED AGE</u>
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64-66	3	<u>Detail Age</u>
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Three positions are used to code detail age. Location 64 identifies age in years, months, days, etc. Locations 65-66 are the number of years, months, days, etc.

0	01-99	... Years less than 100
1	00-99	... Years 100 or more
2	01-11,99	... Months
3	01-03,99	... Weeks
4	01-27,99	... Days
5	01-23, 99	... Hours
6	01-59, 99	... Minutes
9	99	... Age not stated

67-68	2	<u>Age Recode 52</u>
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01	... Under 1 hour (includes not stated hours and minutes)
02	... 1 - 23 hours
03	... 1 day (includes not stated days)
04	... 2 days
05	... 3 days
06	... 4 days
07	... 5 days
08	... 6 days
09	... 7 - 13 days (includes not stated weeks)
10	... 14 - 20 days
11	... 21 - 27 days
12	... 1 month (includes not stated months)
13	... 2 months
14	... 3 months
15	... 4 months
16	... 5 months
17	... 6 months
18	... 7 months
19	... 8 months
20	... 9 months
21	... 10 months
22	... 11 months
23	... 1 year
24	... 2 years
25	... 3 years
26	... 4 years

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
67-68	2	<u>Age Recode 52 - Con.</u>
		27 ... 5 - 9 years
		28 ... 10 - 14 years
		29 ... 15 - 19 years
		30 ... 20 - 24 years
		31 ... 25 - 29 years
		32 ... 30 - 34 years
		33 ... 35 - 39 years
		34 ... 40 - 44 years
		35 ... 45 - 49 years
		36 ... 50 - 54 years
		37 ... 55 - 59 years
		38 ... 60 - 64 years
		39 ... 65 - 69 years
		40 ... 70-74 years
		41 ... 75-79 years
		42 ... 80 - 84 years
		43 ... 85 - 89 years
		44 ... 90 - 94 years
		45 ... 95 - 99 years
		46 ... 100 - 104 years
		47 ... 105 - 109 years
		48 ... 110 - 114 years
		49 ... 115 - 119 years
		50 ... 120 - 124 years
		51 ... 125 years and over
		52 ... Age not stated
69-70	2	<u>Age Recode 27</u>
		01 ... Under 1 month (includes not stated weeks, days, hours, and minutes)
		02 ... 1 month - 11 months (includes not stated months)
	03	... 1 years
		04 ... 2 years
		05 ... 3 years
		06 ... 4 years
		07 ... 5 - 9 years
		08 ... 10 - 14 years
		09 ... 15 - 19 years
		10 ... 20 - 24 years
		11 ... 25 - 29 years
		12 ... 30 - 34 years
		13 ... 35 - 39 years
		14 ... 40 - 44 years
		15 ... 45 - 49 years
		16 ... 50 - 54 years
		17 ... 55 - 59 years

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
69-70	2	<u>Age Recode 27 - Con.</u>
		18 ... 60 - 64 years
		19 ... 65 - 69 years
		20 ... 70 - 74 years
		21 ... 75 - 79 years
		22 ... 80 - 84 years
		23 ... 85 - 89 years
		24 ... 90 - 94 years
		25 ... 95 - 99 years
		26 ... 100 years and over
		27 ... Age not stated
71-72	2	<u>Age Recode 12</u>
		01 ... Under 1 year (includes not stated infant ages)
		02 ... 1 - 4 years
		03 ... 5 - 14 years
		04 ... 15 - 24 years
		05 ... 25 - 34 years
		06 ... 35 - 44 years
		07 ... 45 - 54 years
		08 ... 55 - 64 years
		09 ... 65 - 74 years
		10 ... 75 - 84 years
		11 ... 85 years and over
		12 ... Age not stated
73-74	2	<u>Infant Age Recode 22</u>
		Blank ... Age 1 year and over or not stated
		01 ... Under 1 hour (includes not stated hours and minutes)
		02 ... 1 - 23 hours
		03 ... 1 day (includes not stated days)
		04 ... 2 days
		05 ... 3 days
		06 ... 4 days
		07 ... 5 days
		08 ... 6 days
		09 ... 7 days (includes not stated weeks)
		10 ... 14 - 20 days
		11 ... 21 - 27 days
		12 ... 1 month (includes not stated months)
		13 ... 2 months
		14 ... 3 months
		15 ... 4 months
		16 ... 5 months
		17 ... 6 months

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
73-74	2	<u>Infant Age Recode 22 - Con.</u> 18 ... 7 months 19 ... 8 months 20 ... 9 months 21 ... 10 months 22 ... 11 months
75	1	<u>Place of Death and Decedent's Status</u> 1 ... Hospital, clinic or Medical Center - Inpatient 2 ... Hospital, Clinic or Medical Center - Outpatient or admitted to Emergency Room 3 ... Hospital, Clinic or Medical Center - Dead on Arrival 4 ... Hospital, Clinic or Medical Center - Patient status unknown 5 ... Nursing home 6 ... Residence 7 ... Other 9 ... Place of death unknown
76	1	<u>Reserved Position</u>
77	1	<u>Marital Status</u> 1 ... Never married, single 2 ... Married 3 ... Widowed 4 ... Divorced 8 ... Marital Status not on certificate 9 ... Marital Status not stated
78-79	2	<u>State of Birth</u> 01 ... Alabama 02 ... Alaska 03 ... Arizona 04 ... Arkansas 05 ... California 06 ... Colorado 07 ... Connecticut 08 ... Delaware 09 ... District of Columbia 10 ... Florida 11 ... Georgia

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
78-79	2	<u>State of Birth - Con.</u>
	12	... Hawaii
	13	... Idaho
	14	... Illinois
	15	... Indiana
	16	... Iowa
	17	... Kansas
	18	... Kentucky
	19	... Louisiana
	20	... Maine
	21	... Maryland
	22	... Massachusetts
	23	... Michigan
	24	... Minnesota
	25	... Mississippi
	26	... Missouri
	27	... Montana
	28	... Nebraska
	29	... Nevada
	30	... New Hampshire
	31	... New Jersey
	32	... New Mexico
	33	... New York
	34	... North Carolina
	35	... North Dakota
	36	... Ohio
	37	... Oklahoma
	38	... Oregon
	39	... Pennsylvania
	40	... Rhode Island
	41	... South Carolina
	42	... South Dakota
	43	... Tennessee
	44	... Texas
	45	... Utah
	46	... Vermont
	47	... Virginia
	48	... Washington
	49	... West Virginia
	50	... Wisconsin
	51	... Wyoming
	52	... Puerto Rico
	53	... Virgin Island
	54	... Guam
	55	... Canada
	56	... Cuba
	57	... Mexico
	59	... Remainder of the world
	61	... American Samoa

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
78-79	2	<u>State of Birth - Con.</u> 62 ...Northern Marianas 99 ... State of birth unknown
80-81	2	<u>Hispanic Origin</u> Beginning data year 1997 all States report Hispanic Origin. 00 ... Non - Hispanic 01 ... Mexican 02 ... Puerto Rican 03 ... Cuban 04 ... Central or South American 05 ... Other or unknown Hispanic 99 ... Unknown
82	1	<u>Hispanic Origin/Race Recode</u> 1 ... Mexican 2 ... Puerto Rican 3 ... Cuban 4 ... Central or South American 5 ... Other or unknown Hispanic 6 ... Non - Hispanic white 7 ... Non - Hispanic black 8 ... Non - Hispanic other races 9 ... Hispanic origin unknown
83	1	<u>Day of Week of Death</u> 1 ... Sunday 2 ... Monday 3 ... Tuesday 4 ... Wednesday 5 ... Thursday 6 ... Friday 7 ... Saturday 9 ... Unknown
84	1	<u>Reserved Position</u>

United States ICD-9 / ICD-10 Comparability Public Use File

<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
85-87	3	<p><u>Kind of Business or Industry</u></p> <p>This item is not reported by all States. Refer to the Addendum to the Technical Appendix at the back of this publication for a list of reporting States.</p> <p>A new coding structure was instituted for the 1993 data year. For a complete list of categories and codes refer to:</p> <p style="text-align: center;">U.S. Bureau of the Census: Classified index of industries and occupations. 1990 Census of Population and Housing. First Edition. Washington. U.S. Government Printing Office, April 1992.</p> <p>010-960 ... Code range (not inclusive)</p> <p>In addition to the codes shown in the Census publication, the following codes are also applicable:</p> <p>961 ... Own home/At home 970 ... Retired; with no other industry reported 990 ... Blank, Unknown, NA</p>
88-90	3	<p><u>Usual Occupation</u></p> <p>This item is not reported by all States. Refer to the Addendum to the Technical Appendix at the back of this publication for a list of reporting States.</p> <p>A new coding structure was instituted for the 1993 data year. For a complete list of categories and codes refer to the Census Bureau publication mentioned above.</p> <p>003-905 ... Code range (not inclusive)</p> <p>In addition to the codes shown in the Census publication, the following codes are also applicable:</p> <p>913 ... Retired; with no other occupation reported 914 ... Housewife/Homemaker 915 ... Student 916 ... Volunteer 917 ... Unemployed, never worked, disabled, child, infant 999 ... Blank, Unknown, NA</p>
91-93	3	<p><u>52 Cause Recode</u></p> <p>A recode of the ICD-9 underlying cause code into 52 groups for tabulation. See public use data file documentation (Mcod96.pdf) for a complete list of recodes and the causes included.</p> <p>010-560 ... Code range</p>
94-96	3	<p><u>Reserved Positions</u></p>

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
97-101	5	<p><u>Place (city) of Residence (FIPS)</u></p> <p>A complete list of cities is shown in the Geographic code outline in Mcod96.pdf. Effective with the 1994 data year, the FIPS place code has been added to the Mortality record. It identifies each city of 100,000 population or more in 1990.</p> <p>00000 ... Foreign residents 00001- nnnnn ... code range 99999 ... Balance of county; or city of less than 100,000 population</p>
102-114	13	<u>Reserved Positions</u>
115-118	4	<p><u>Current Data Year</u></p> <p>1999 ...1999</p>
119-132	14	<p><u>FEDERAL INFORMATION PROCESSING STANDARDS (FIPS) GEOGRAPHIC CODES</u></p> <p>Refer to the Geographic Code Outline in Mcod96.pdf for a detailed list of areas and codes. For an explanation of FIPS codes, reference should be made to various National Institute of Standards and Technology (NIST) publications. Some geographic codes have been changed to reflect the results of the 1990 Census.</p>
119-120	2	<p><u>State of Occurrence (FIPS)</u></p> <p>United States 01 ... Alabama 02 ... Alaska 04 ... Arizona 05 ... Arkansas 06 ... California 08 ... Colorado 09 ... Connecticut 10 ... Delaware 11 ... District of Columbia 12 ... Florida 13 ... Georgia 15 ... Hawaii 16 ... Idaho 17 ... Illinois 18 ... Indiana 19 ... Iowa 20 ... Kansas 21 ... Kentucky</p>

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
119-120	2	<u>State of Occurrence (FIPS) - Con.</u>
	22	... Louisiana
	23	... Maine
	24	... Maryland
	25	... Massachusetts
	26	... Michigan
	27	... Minnesota
	28	... Mississippi
	29	... Missouri
	30	... Montana
	31	... Nebraska
	32	... Nevada
	33	... New Hampshire
	34	... New Jersey
	35	... New Mexico
	36	... New York
	37	... North Carolina
	38	... North Dakota
	39	... Ohio
	40	... Oklahoma
	41	... Oregon
	42	... Pennsylvania
	44	... Rhode Island
	45	... South Carolina
	46	... South Dakota
	47	... Tennessee
	48	... Texas
	49	... Utah
	50	... Vermont
	51	... Virginia
	53	... Washington
	54	... West Virginia
	55	... Wisconsin
	56	... Wyoming
		 Puerto Rico
	72	... Puerto Rico
		 Virgin Islands
	78	... Virgin Islands
		 Guam
	66	... Guam

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
119-120	2	<u>State of Occurrence (FIPS) - Con.</u> American Samoa 60 ... American Samoa Northern Marianas 69 ... Northern Marianas
121-123	3	<u>County of Occurrence (FIPS)</u> Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State and identify each county with a population of 100,000 or more in 1990. (Note: To uniquely identify a county, both the state and county codes must be used.) A complete list of counties is shown in the Geographic Code Outline in Mcod96.pdf. 001-nnn ... Code range 999 ... County of less than 100,000 population
124-125	2	<u>State of Residence (FIPS)</u> 00 ... Foreign residents 01 ... Alabama 02 ... Alaska 04 ... Arizona 05 ... Arkansas 06 ... California 08 ... Colorado 09 ... Connecticut 10 ... Delaware 11 ... District of Columbia 12 ... Florida 13 ... Georgia 15 ... Hawaii 16 ... Idaho 17 ... Illinois 18 ... Indiana 19 ... Iowa 20 ... Kansas 21 ... Kentucky 22 ... Louisiana 23 ... Maine 24 ... Maryland 25 ... Massachusetts 26 ... Michigan 27 ... Minnesota

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
124-125	2	<u>State of Residence (FIPS) - Con.</u>
	28	... Mississippi
	29	... Missouri
	30	... Montana
	31	... Nebraska
	32	... Nevada
	33	... New Hampshire
	34	... New Jersey
	35	... New Mexico
	36	... New York
	37	... North Carolina
	38	... North Dakota
	39	... Ohio
	40	... Oklahoma
	41	... Oregon
	42	... Pennsylvania
	44	... Rhode Island
	45	... South Carolina
	46	... South Dakota
	47	... Tennessee
	48	... Texas
	49	... Utah
	50	... Vermont
	51	... Virginia
	53	... Washington
	54	... West Virginia
	55	... Wisconsin
	56	... Wyoming
		 Puerto Rico Occurrence
	72	... Puerto Rico
	00-56,60, 66,	
	78	... Foreign residents: refer to U.S. for specific code structure.
		 Virgin Islands Occurrence
	78	... Virgin Islands
	00-56,60, 66,	
	72	... Foreign residents: refer to U.S. for specific code structure.
		 Guam Occurrence
	66	... Guam
	01-56	... U.S. Resident. Also considered a resident of Guam.
	00, 60, 72, 78	... Foreign residents: refer to U.S. for specific code structure.

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
124-125	2	<p><u>State of Residence (FIPS) - Con.</u></p> <p>American Samoa Occurrence</p> <p>60 ... American Samoa 00-56, 66, 72, 78 ... Foreign residents: refer to U.S. for specific code structure.</p> <p>Northern Marianas Occurrence</p> <p>69 ... Northern Marianas 00-56,60,66 72,78 ... Foreign residents: refer to U.S. for specific code structure.</p>
126-128	3	<p><u>County of Residence (FIPS)</u></p> <p>Counties and county equivalents (independent and coextensive cities) are numbered alphabetically within each State and identify each county with a population of 100,000 or more in 1990. (Note: To uniquely identify a county, both the state and county codes must be used.) A complete list of counties is shown in the Geographic Code Outline in Mcod96.pdf.</p> <p>000 ... Foreign residents 001-999 ... Code range 999 ... County of less than 100,000 population</p>
129-132	4	<p><u>PMSA/MSA of Residence (FIPS)</u></p> <p>Primary Metropolitan Statistical Areas and Metropolitan Statistical Areas are those defined by the U.S. Office of Management and Budget (OMB) as of 1990. For New England, the New England County Metropolitan Areas (NECMA) are used.</p> <p>Further back in this document is a list of PMSA's, MSA's, NECMA's, and their component counties.</p>
129-132	4	<p><u>PMSA/MSA of Residence (FIPS) - Con.</u></p> <p>0000 ... Nonmetropolitan counties or foreign residents 0040-9360 ... Code range 9999 ... Area of less than 100,000 population</p>
133	1	<p><u>Reserved Position</u></p>

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
134-135	2	<p><u>CMSA of Residence (FIPS)</u></p> <p>Consolidated Metropolitan Statistical Areas are groupings of certain Primary Metropolitan Statistical Areas and are defined by the U.S. Office of Management and Budget (OMB) as of 1990.</p> <p>All Areas</p> <p>00 ... Not a CMSA</p> <p>United States Occurrence</p> <p>07 ... Boston - Worcester-Lawrence, MA-NH-ME-CT, CMSA 14 ... Chicago - Gary-Kenosha, IL-IN-WI, CMSA 21 ... Cincinnati - Hamilton, OH-KY-IN, CMSA 28 ... Cleveland - Akron, OH, CMSA 31 ... Dallas - Fort Worth, TX, CMSA 34 ... Denver - Boulder-Greeley, CO, CMSA 35 ... Detroit - Ann Arbor-Flint, MI, CMSA 42 ... Houston - Galveston-Brazoria, TX, CMSA 49 ... Los Angeles -Riverside- Orange County, CA, CMSA 56 ... Miami - Fort Lauderdale, FL, CMSA</p>
134-135	2	<p><u>CMSA of Residence (FIPS)</u></p> <p>63 ... Milwaukee - Racine, WI, CMSA 70 ... New York -Northern New Jersey-Long Island, NY-NJ-CT-PA, CMSA 77 ... Philadelphia - Wilmington-Atlantic City, PA-NJ-DE-MD, CMSA 79 ... Portland - Salem , OR-WA, CMSA 82 ... Sacramento - Yolo, CA, CMSA 84 ... San Francisco -Oakland-San Jose, CA, CMSA 91 ... Seattle - Tacoma-Bremerton, WA, CMSA 97 ... Washington - Baltimore, DC-MD-VA-WV, CMSA</p> <p>Puerto Rico Occurrence</p> <p>87 ... San Juan -Caguas-Arecibo, PR, CMSA</p>
136	1	<p><u>Injury at Work</u></p> <p>1 ... Yes 2 ... No 9 ... Unknown</p>

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
137	1	<u>Race Imputation Flag</u> Blank ... Race is not imputed 1 ... Unknown race is imputed 2 ... All other races, formerly code 09, is imputed
138	1	<u>Age Substitution Flag</u> If reported age is unknown but a valid age is calculated using dates of birth and death, the calculated age is substituted for the unknown reported age. 1 ... Calculated age is substituted for reported age
139-140	2	<u>Reserved Positions</u>
141	1	<u>Place of Accident for Causes E850-E869 and E880-E928</u> Blank ... Causes other than E850-E869 and E880-E928 0 ... Home 1 ... Farm 2 ... Mine and quarry 3 ... Industrial place and premise 4 ... Place for recreation and sports 5 ... Street and highway 6 ... Public building 7 ... Resident institution 8 ... Other specified places 9 ... Place of accident not specified
142-159	18	<u>ICD-9 UNDERLYING CAUSE OF DEATH</u>
142-145	4	<u>ICD Code (9th Revision)</u> See the International Classification of Diseases, 1975 Revision, Volume 1. For injuries and poisoning, the external cause is coded (E800-E999) rather than the Nature of Injury (800-999). These positions do not include the letter E for the external cause of injury. For those causes that do not have a 4 th digit, location 145 is blank.

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
146-150	5	<p><u>282 Cause Recode</u></p> <p>A recode of the ICD-9 underlying cause code into 282 groups for NCHS publications. See public use data file documentation (Mcod96.pdf) for a complete list of recodes and the causes included.</p> <p>00300-35800 ... Code range (not inclusive)</p>
151-153	3	<p><u>72 Cause Recode</u></p> <p>A recode of the ICD-9 underlying cause code into 72 groups for NCHS publications. See public use data file documentation (Mcod96.pdf) for a complete list of recodes and the causes included.</p> <p>010-840 ... Code range (not inclusive)</p>
154-156	3	<p><u>61 Infant Cause Recode</u></p> <p>A recode of the ICD-9 underlying cause code into 61 groups for NCHS publications. See public use data file documentation (Mcod96.pdf) for a complete list of recodes and the causes included.</p> <p>010-680 Code range (not inclusive)</p>
157-159	3	<p><u>34 Cause Recode</u></p> <p>A recode of the ICD-9 underlying cause code into 34 groups for NCHS publications. See public use data file documentation (Mcod96.pdf) for a complete list of recodes and the causes included.</p> <p>010-370 ,,. Code range (not inclusive)</p>
160-440	281	<u>ICD-9 MULTIPLE CONDITIONS</u>
160-161	2	<p><u>Number of Entity-Axis Conditions</u></p> <p>00-20 ... Code range</p>

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
162-301	140	<u>ICD-9 ENTITY - AXIS CONDITIONS</u>

Space has been provided for maximum of 20 conditions. Each condition takes 7 positions in the record. Records that do not have 20 conditions are blank in the unused area.

Position 1: Part/line number on certificate

1	...	Part I, line 1 (a)
2	...	Part I, line 2 (b)
3	...	Part I, line 3 (c)
4	...	Part I, line 4 (d)
5	...	Part I, line 5 (e)
6	...	Part II

Position 2: Sequence of condition within part/line

1-7	...	Code range
-----	-----	------------

Position 3 - 6: Condition code

See Table 1 on "Mcod96.pdf" for a complete list of codes

Position 7: Nature of Injury Flag

1	...	Indicates that the code in positions 3-6 is a Nature of Injury code
0	...	All other codes

162-168	7	1 st Condition
169-175	7	2 nd Condition
176-182	7	3 rd Condition
183-189	7	4 th Condition
190-196	7	5 th Condition
197-203	7	6 th Condition
204-210	7	7 th Condition
211-217	7	8 th Condition
218-224	7	9 th Condition
225-231	7	10 th Condition

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
162-301	140	<u>ICD-9 ENTITY - AXIS CONDITIONS - Con.</u>
232-238	7	11 th Condition
239-245	7	12 th Condition
246-252	7	13 th Condition
253-259	7	14 th Condition
260-266	7	15 th Condition
267-273	7	16 th Condition
274-280	7	17 th Condition
281-287	7	18 th Condition
288-294	7	19 th Condition
295-301	7	20 th Condition
302-337	36	<u>Reserved Positions</u>
338-339	2	<u>Number of ICD-9 Record-Axis Conditions</u>
		00-20 ... Code range
340	1	<u>Reserved Position (TRANSAX flag)</u>

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
341-440	100	<u>ICD-9 RECORD - AXIS CONDITIONS</u>

Space has been provided for a maximum of 20 conditions. Each condition takes 5 positions in the record. Records that do not have 20 conditions are blank in the unused area.

Positions 1 - 4: Condition Code

See Table 1 on "Mcod96.pdf" for a complete list of codes

Position 5: Nature of Injury Flag

1	...	Indicates that the code in positions 1-4 is a Nature of Injury code
0	...	All other codes

341-345	5	1 st Condition
346-350	5	2 nd Condition
351-355	5	3 rd Condition
356-360	5	4 th Condition
361-365	5	5 th Condition
366-370	5	6 th Condition
371-375	5	7 th Condition
376-380	5	8 th Condition
381-385	5	9 th Condition
386-390	5	10 th Condition
391-395	5	11 th Condition
396-400	5	12 th Condition
401-405	5	13 th Condition
406-410	5	14 th Condition
411-415	5	15 th Condition
416-420	5	16 th Condition
421-425	5	17 th Condition

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
341-440		<u>RECORD - AXIS CONDITIONS - Con.</u>
426-430	5	18 th Condition
431-435	5	19 th Condition
436-440	5	20 th Condition

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>																					
441-689	249	<u>ICD-10 AND COMPARABILITY PORTION OF FILE</u>																					
441	1	Comparability analysis flag <table border="0"> <tr> <td>Blank</td> <td>...</td> <td>Record may be used toward comparability analyses</td> </tr> <tr> <td>Y</td> <td>...</td> <td>Record should be excluded from comparability analyses</td> </tr> </table>	Blank	...	Record may be used toward comparability analyses	Y	...	Record should be excluded from comparability analyses															
Blank	...	Record may be used toward comparability analyses																					
Y	...	Record should be excluded from comparability analyses																					
444-447	4	<u>ICD-10 Underlying Cause Code</u> See the International Classification of Diseases, 1992 Revision, Volume 1.																					
449-688	240	<u>ICD-10 MULTIPLE CONDITIONS</u>																					
449-588	140	<u>ICD-10 ENTITY- AXIS CONDITIONS</u> Space has been provided for maximum of 20 conditions. Each condition takes 7 positions in the record. The 7th position will be blank. Records that do not have 20 conditions are blank in the unused area. Position 1: Part/line number on certificate <table border="0"> <tr><td>1</td><td>...</td><td>Part I, line 1 (a)</td></tr> <tr><td>2</td><td>...</td><td>Part I, line 2 (b)</td></tr> <tr><td>3</td><td>...</td><td>Part I, line 3 (c)</td></tr> <tr><td>4</td><td>...</td><td>Part I, line 4 (d)</td></tr> <tr><td>5</td><td>...</td><td>Part I, line 5 (e)</td></tr> <tr><td>6</td><td>...</td><td>Part II</td></tr> </table> Position 2: Sequence of condition within part/line <table border="0"> <tr><td>1-7</td><td>...</td><td>Code range</td></tr> </table> Position 3 - 6: Condition code	1	...	Part I, line 1 (a)	2	...	Part I, line 2 (b)	3	...	Part I, line 3 (c)	4	...	Part I, line 4 (d)	5	...	Part I, line 5 (e)	6	...	Part II	1-7	...	Code range
1	...	Part I, line 1 (a)																					
2	...	Part I, line 2 (b)																					
3	...	Part I, line 3 (c)																					
4	...	Part I, line 4 (d)																					
5	...	Part I, line 5 (e)																					
6	...	Part II																					
1-7	...	Code range																					
449-455	7	1st Condition																					
456-462	7	2nd Condition																					
463-469	7	3rd Condition																					
470-476	7	4th Condition																					
477-483	7	5th Condition																					
484-490	7	6th Condition																					
449-588	140	<u>ICD-10 ENTITY- AXIS CONDITIONS - Con.</u>																					

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
491-497	7	7th Condition
498-504	7	8th Condition
505-511	7	9th Condition
512-518	7	10th Condition
519-525	7	11th Condition
526-532	7	12th Condition
533-539	7	13th Condition
540-546	7	14th Condition
547-553	7	15th Condition
554-560	7	16th Condition
561-567	7	17th Condition
568-574	7	18th Condition
575-581	7	19th Condition
582-588	7	20th Condition

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<u>Tape Location</u>	<u>Field Size</u>	<u>Item and Code Outline</u>
589-688	100	<u>ICD-10 RECORD- AXIS CONDITIONS</u>

Space has been provided for a maximum of 20 conditions. Each condition takes 5 positions in the record. The 5th position will be blank. Records that do not have 20 conditions are blank in the unused area.

Positions 1 - 4: Condition Code

589-593	5	1st Condition
594-598	5	2nd Condition
599-603	5	3rd Condition
604-608	5	4th Condition
609-613	5	5th Condition
614-618	5	6th Condition
619-623	5	7th Condition
624-628	5	8th Condition
629-633	5	9th Condition
634-638	5	10th Condition
639-643	5	11th Condition
644-648	5	12th Condition
649-653	5	13th Condition
654-658	5	14th Condition
659-663	5	15th Condition
664-668	5	16th Condition
669-673	5	17th Condition
674-678	5	18th Condition
679-683	5	19th Condition
684-688	5	20th Condition

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<u>Tape</u> <u>Location</u>	<u>Field</u> <u>Size</u>	<u>Item and Code Outline</u>
689	1	<u>Manner of Death</u>
	1	... Accident
	2	... Suicide
	3	... Homicide
	4	... Pending investigation
	5	... Could not determine
	6	... Self-Inflicted
	7	... Natural
	blank	... Not specified

References

¹ World Health Organization. International Statistical Classification of Diseases and Related Health Problems, Tenth Revision. Geneva; World Health Organization. 1992.

² Anderson RN, Miniño AM, Hoyert DL, Rosenberg HM. Comparability of cause of death between ICD-9 and ICD-10: Preliminary estimates, National Vital Statistics Reports; Vol. 49 No. 2. Hyattsville, Maryland; National Center for Health Statistics. 2001.

³ Murphy SL. Deaths: Final Data for 1998, National Vital Statistics Reports; Vol. 48 No. 11. Hyattsville, Maryland; National Center for Health Statistics. 2000.

⁴ Rooney C, Griffiths C, Cook L. The implementation of ICD-10 for cause of death coding – some preliminary results from the bridge coding study, *Health Statistics Quarterly*; Vol. 13. Spring 2002.