

## Third National Health and Nutrition Examination Survey (NHANES III) Linked Mortality File Public-use File Layout

Variable	Data Type	Position	Length	Field Description
<i>SEQN</i>	numeric	1	5	NHANES III Sequence Number – <a href="#">See Detailed Notes</a>
<i>ELIGSTAT</i>	numeric	6	1	Eligibility Status for Mortality Follow-up <a href="#">See Detailed Notes</a>
			1	Eligible
			2	Under age 17, not available for public release <sup>1</sup>
			3	Ineligible
<b>Death Information</b>				
<i>MORTSTAT</i>	numeric	7	1	Final Mortality Status – <a href="#">See Detailed Notes</a>
			0	Assumed alive
			1	Assumed deceased
			Blank	Ineligible for mortality follow-up or under age 17
<i>MORTSRCE_DC</i>	numeric	8	1	Mortality Source: Death Certificate Match <a href="#">See Detailed Notes</a>
			0	No
			1	Yes
			Blank	Ineligible for mortality follow-up, under age 17, or assumed alive
<i>MORTSRCE_NDI</i>	numeric	9	1	Mortality Source: NDI Match – <a href="#">See Detailed Notes</a>
			0	No
			1	Yes
			Blank	Ineligible for mortality follow-up, under age 17, or assumed alive
<i>MORTSRCE_SSA</i>	numeric	10	1	Mortality Source: SSA Information – <a href="#">See Detailed Notes</a>
			0	No
			1	Yes
			Blank	Ineligible for mortality follow-up, under age 17, or assumed alive

<sup>1</sup>Data for survey participants under age 17 at the time of the NHANES III survey can be accessed via the NHANES III restricted-use linked mortality file in the NCHS Research Data Center (RDC).

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Variable	Data Type	Position	Length	Field Description
<i>MORTSRCE_CMS</i>	numeric	11	1	Mortality Source: CMS Information – <a href="#">See Detailed Notes</a>  0      No 1      Yes Blank      Ineligible for mortality follow-up, under age 17, or assumed alive
<i>PERMTH_INT</i>	numeric	12	3	Person Months of Follow-up from Interview Date <a href="#">See Detailed Notes</a>  0 - 218 Blank      Ineligible for mortality follow-up or under age 17
<i>PERMTH_EXM</i>	numeric	15	3	Person Months of Follow-up from MEC/Home Exam Date – <a href="#">See Detailed Notes</a>  0 - 217 Blank      Ineligible for mortality follow-up, under age 17, or respondent was not examined
<b>Death Certificate Data</b>				
<i>CAUSEAVL</i>	numeric	18	1	Cause of Death Data Available – <a href="#">See Detailed Notes</a>  0      No 1      Yes Blank      Ineligible for mortality follow-up, under age 17, or assumed alive
<i>UCOD_113</i>	char	19	3	ICD-10 (all years) Underlying Cause of Death 113 Groups Recode – <a href="#">See Detailed Notes</a>  001 – 135      Code range Blank      Ineligible for mortality follow-up, under age 17, assumed alive, or cause of death code not available

<sup>1</sup>Data for survey participants under age 17 at the time of the NHANES III survey can be accessed via the NHANES III restricted-use linked mortality file in the NCHS Research Data Center (RDC).

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Variable	Data Type	Position	Length	Field Description
<b>Multiple Cause of Death Flags</b>				
<i>DIABETES</i>	numeric	22	1	Diabetes Flag from Multiple Cause of Death (MCOB) <a href="#">See Detailed Notes</a>
			0	No
			1	Yes – Diabetes listed as a multiple cause of death
			Blank	Ineligible for mortality follow-up, under age 17, assumed alive, or cause of death code not available
<i>HYPERTEN</i>	numeric	23	1	Hypertension Flag from Multiple Cause of Death (MCOB) – <a href="#">See Detailed Notes</a>
			0	No
			1	Yes – Hypertension listed as a multiple cause of death
			Blank	Ineligible for mortality follow-up, under age 17, assumed alive, or cause of death code not available
<i>HIPFRACT</i>	numeric	24	1	Hip Fracture Flag from Multiple Cause of Death (MCOB) – <a href="#">See Detailed Notes</a>
			0	No
			1	Yes – Hip fracture listed as a multiple cause of death
			Blank	Ineligible for mortality follow-up, under age 17, assumed alive, or cause of death code not available

# The National Health and Nutrition Examination Survey (NHANES III) Linked Mortality File

## Public-use Detailed Notes for Selected Variables

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### *SEQN* – NHANES III Sequence Number

The NHANES III Linked Mortality Public-use File can be linked to other public-use NHANES III data files using the numeric variable, SEQN. Using this variable will ensure the appropriate information for each survey participant is merged correctly.

### *ELIGSTAT* – Eligibility Status for Mortality Follow-Up

NHANES III participants are defined as ineligible for mortality linkage if they had insufficient identifying data to create a National Death Index submission record (See [Mortality Linkage Eligibility, Tables 1 and 2](#)). Linked mortality data for NHANES III participants under 17 at the time of the NHANES III interview are not included on the public-use version of the NHANES III Linked Mortality file. Researchers interested in analyzing the linked mortality data for NHANES III participants under 17 should review the guidelines for accessing the [restricted-use version](#) of the NHANES III Linked Mortality File.

### *MORTSTAT* – Final Mortality Status

The MORTSTAT variable is NCHS's final determination of vital status and should be used as an outcome variable and to calculate survival. Each NHANES III participant who is eligible for mortality follow-up is assigned a vital status code (0 = assumed alive; 1 = assumed deceased).

**MORTALITY SOURCE.** NCHS has multiple sources of information to determine the final mortality status of a NHANES III survey participant. Variables indicating which source or sources were used to determine vital status are available on the linked mortality file and are described below. Any combination of these mortality sources was used to identify NHANES III as decedents.

### *MORTSRCE\_DC* – Mortality Source: Death Certificate

Death certificates may be reviewed to compare information provided on the death certificate with data collected from NHANES III survey records in order to assist NCHS in determining if a potential National Death Index match record correctly matches the NCHS survey participant.

### *MORTSRCE\_NDI* - Mortality Source: NDI Match

Mortality status was ascertained through a probabilistic match to a National Death Index (NDI) record.

### *MORTSRCE\_SSA* - Mortality Source: SSA Information

Mortality status was obtained from the Social Security Administration (SSA).

**The National Health and Nutrition Examination Survey (NHANES III)  
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***MORTSRCE\_CMS*** - Mortality Source: CMS Information

Mortality status was obtained from the Centers for Medicare and Medicaid Services (CMS).

***PERMTH\_INT***—Person Months of Follow-up from Interview Date

***PERMTH\_EXM***—Person Months of Follow-up from MEC/Exam Date

The public-use version of the NHANES III Linked Mortality File does not contain exact date of NHANES III interview or examination nor exact date of death. Rather, information regarding number of person months of follow-up from the date of interview and/or examination has been provided to allow data users to conduct survival analyses. For decedents, person months of follow-up were calculated from interview date/examination date through the date of death, using the perturbed date of death where applicable. For respondents assumed alive, person months of follow-up were calculated from interview date/examination date through the end of the mortality follow-up period, December 31, 2006.

***CAUSEAVL*** – Cause of Death Data Available

Death certificate data is available only for cases where the variable MORTSTAT=1 and MORTSRCE\_NDI = 1 or MORTSRCE\_DC = 1. Users should note that it is possible to have an NDI or death certificate match but no cause of death data available.

***UCOD\_113*** - Underlying Cause of Death 113 Groups All Years (ICD-10)

Cause of death coding for all U.S. deaths occurring prior to 1999 follows the 9th revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death (ICD-9) guidelines, while all deaths after 1998 follows the 10th revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death (ICD-10) guidelines. To assist the researcher with analyses that span the entire survey specific mortality period, the [UCOD 113](#) variable was created as a recode of all deaths occurring prior to 1999 coded under ICD-9 guidelines into comparable ICD-10 based underlying cause of death groups.

For more on the comparability of ICD-9 and ICD-10 underlying cause of death UCOD 113 recode see: Anderson RN, Minino 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, MD: National Center for Health Statistics. 2001. This document is also available on the NCHS website.

For more information regarding ICD-9 coding guidelines see the Manual of the International Statistical Classification of Diseases , Injuries, and Causes of Death: Based on the Recommendations of the Ninth Revision Conference, 1975, and Adopted by the Twenty-ninth World Health Assembly, Volume 1, 1977 (World Health Organization).

For more information regarding ICD-10 coding guidelines see the International Statistical

**The National Health and Nutrition Examination Survey (NHANES III)  
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Classification of Diseases and Related Health Problems, Tenth Revision. (World Health Organization) 1992. Revision, Volume 1.

***DIABETES, HYPERTENS, & HIPFRACT***—Multiple cause of death flags

Certain contributing causes of death are only coded in the multiple causes of death codes according to ICD coding rules. The current NHANES III Linked Mortality Public-use File does not include the 20 entity-axis multiple causes of death codes. The multiple causes of death codes are only available on the [restricted-use version](#) of the NHANES III Linked Mortality File. However, in an effort to increase the utility of the public datasets, NCHS selected the three most commonly reported conditions found in the multiple causes of death codes (diabetes, hypertension, and hip fracture) and included a flag variable for each condition on the public-use version of the NHANES III Linked Mortality File. The flag variables were coded a 1 if specific ICD codes were found in any one of the 20 contributing or multiple causes of death fields as follows:

***DIABETES*** = '1' if ICD-9 code '250' or ICD-10 codes 'E10 thru E14' was coded in entity-axis or record-axis multiple cause of death codes

***HYPERTENS*** = '1' if ICD-9 codes '401' or '403' or ICD-10 codes 'I10' or 'I12' was coded in entity-axis or record-axis multiple cause of death codes

***HIPFRACT*** = '1' ICD-9 code 'E820' or ICD-10 codes 'S720 thru S722' were coded in entity-axis or record-axis multiple cause of death codes

# The National Health and Nutrition Examination Survey (NHANES III) Linked Mortality File Public-use Detailed Notes for Selected Variables

## Tenth Revision 113 Selected Causes of Death

ST: 1 = Subtotal

Limited: Sex: 1 = Males; 2 = Females

Age: 1 = 5 and over; 2 = 10-54; 3 = 28 days and over;

4 = Under 1 year; 5 = 1-4 years; 6 = 1 year and over;

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\*\*\*Cause Subtotals are not identified in this file\*\*\*

113 S Limited

Recode T Sex Age Cause Title and ICD-10 Codes Included

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001				Salmonella infections (A01-A02)
002				Shigellosis and amebiasis (A03,A06)
003				Certain other intestinal infections (A04,A07-A09)
004	1			Tuberculosis (A16-A19)
005				Respiratory tuberculosis (A16)
006				Other tuberculosis (A17-A19)
007				Whooping cough (A37)
008				Scarlet fever and erysipelas (A38,A46)
009				Meningococcal infection (A39)
010		3		Septicemia (A40-A41)
011				Syphilis (A50-A53)
012				Acute poliomyelitis (A80)
013				Arthropod-borne viral encephalitis (A83-A84,A85.2)
014				Measles (B05)
015				Viral hepatitis (B15-B19)
016				Human immunodeficiency virus (HIV) disease (B20-B24)
017				Malaria (B50-B54)
018				Other and unspecified infectious and parasitic diseases and their sequelae (A00,A05,A20-A36,A42-A44,A48-A49, A54-79,A81-A82,A85.0-A85.1,A85.8, A86-B04,B06-B09,B25-B49,B55-99)
019	1			Malignant neoplasms (C00-C97)
020				Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)
021				Malignant neoplasm of esophagus (C15)
022				Malignant neoplasm of stomach (C16)
023				Malignant neoplasms of colon, rectum and anus (C18-C21)
024				Malignant neoplasms of liver and intrahepatic bile ducts (C22)
025				Malignant neoplasm of pancreas (C25)
026				Malignant neoplasm of larynx (C32)
027				Malignant neoplasms of trachea, bronchus and lung (C33-C34)
028				Malignant melanoma of skin (C43)
029				Malignant neoplasm of breast (C50)
030		2		Malignant neoplasm of cervix uteri (C53)
031		2		Malignant neoplasms of corpus uteri and uterus, part unspecified (C54-C55)
032		2		Malignant neoplasm of ovary (C56)
033		1		Malignant neoplasm of prostate (C61)
034				Malignant neoplasms of kidney and renal pelvis (C64-C65)
035				Malignant neoplasm of bladder (C67)
036				Malignant neoplasms of meninges, brain and other parts of central nervous system (C70-C72)
037		1		Malignant neoplasms of lymphoid, hematopoietic and related tissue (C81-C96)

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Recode T Sex Age Cause Title and ICD-10 Codes Included

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038				Hodgkin's disease (C81)
039				Non-Hodgkin's lymphoma (C82-C85)
040				Leukemia (C91-C95)
041				Multiple myeloma and immunoproliferative neoplasms (C88,C90)
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)
044				In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior (D00-D48)
045				Anemias (D50-D64)
046		3		Diabetes mellitus (E10-E14)
047				Nutritional deficiencies (E40-E64)
048				Malnutrition (E40-E46)
049				Other nutritional deficiencies (E50-E64)
050				Meningitis (G00,G03)
051				Parkinson's disease (G20-G21)
052				Alzheimer's disease (G30)
053	1			Major cardiovascular diseases (I00-I78)
054	1			Diseases of heart (I00-I09,I11,I13,I20-I51)
055				Acute rheumatic fever and chronic rheumatic heart diseases (I00-I09)
056				Hypertensive heart disease (I11)
057				Hypertensive heart and renal disease (I13)
058	1			Ischemic heart diseases (I20-I25)
059				Acute myocardial infarction (I21-I22)
060				Other acute ischemic heart diseases (I24)
061	1			Other forms of chronic ischemic heart disease (I20,I25)
062				Atherosclerotic cardiovascular disease, so described (I25.0)
063				All other forms of chronic ischemic heart disease (I20,I25.1-I25.9)
064	1			Other heart diseases (I26-I51)
065				Acute and subacute endocarditis (I33)
066				Diseases of pericardium and acute myocarditis (I30-I31,I40)
067				Heart failure (I50)
068				All other forms of heart disease (I26-I28,I34-I38,I42-I49,I51)
069				Essential (primary) hypertension and hypertensive renal disease (I10,I12)
070				Cerebrovascular diseases (I60-I69)
071				Atherosclerosis (I70)
072	1			Other diseases of circulatory system (I71-I78)

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113 Recode	S T	Limited Sex	Age	Cause Title and ICD-10 Codes Included
073				Aortic aneurysm and dissection (I71)
074				Other diseases of arteries, arterioles and capillaries (I72-I78)
075				Other disorders of circulatory system (I80-I99)
076	1			Influenza and pneumonia (J10-J18)
077				Influenza (J10-J11)
078				Pneumonia (J12-J18)
079	1			Other acute lower respiratory infections (J20-J22)
080				Acute bronchitis and bronchiolitis (J20-J21)
081				Unspecified acute lower respiratory infection (J22)
082	1			Chronic lower respiratory diseases (J40-J47)
083				Bronchitis, chronic and unspecified (J40-J42)
084		3		Emphysema (J43)
085				Asthma (J45-J46)
086				Other chronic lower respiratory diseases (J44,J47)
087				Pneumoconioses and chemical effects (J60-J66,J68)
088				Pneumonitis due to solids and liquids (J69)
089				Other diseases of respiratory system (J00-J06,J30-J39,J67,J70-J98)
090				Peptic ulcer (K25-K28)
091				Diseases of appendix (K35-K38)
092				Hernia (K40-K46)
093	1			Chronic liver disease and cirrhosis (K70,K73-K74)
094				Alcoholic liver disease (K70)
095				Other chronic liver disease and cirrhosis (K73-K74)
096				Cholelithiasis and other disorders of gallbladder (K80-K82)
097	1			Nephritis, nephrotic syndrome and nephrosis (N00-N07,N17-N19,N25-N27)
098				Acute and rapidly progressive nephritic and nephrotic syndrome (N00-N01,N04)
099				Chronic glomerulonephritis, nephritis and nephropathy not specified as acute or chronic, and renal sclerosis unspecified (N02-N03,N05-N07,N26)
100				Renal failure (N17-N19)
101				Other disorders of kidney (N25,N27)
102				Infections of kidney (N10-N12,N13.6,N15.1)
103	1			Hyperplasia of prostate (N40)
104		2		Inflammatory diseases of female pelvic organs (N70-N76)
105	1	2	7	Pregnancy, childbirth and the puerperium (O00-O99)
106		2	7	Pregnancy with abortive outcome (O00-O07)
107		2	7	Other complications of pregnancy, childbirth and the puerperium (O10-O99)
108				Certain conditions originating in the perinatal period (P00-P96)
109				Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)

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113	S	Limited		
Recode	T	Sex	Age	Cause Title and ICD-10 Codes Included
110				Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)
111				All other diseases (Residual) (D65-E07,E15-E34,E65-F99,G04-G12,G23-G25,G31-H93, K00-K22,K29-K31,K50-K66,K71-K72,K75-K76,K83-M99, N13.0-N13.5,N13.7-N13.9, N14,N15.0,N15.8-N15.9,N20-N23,N28-N39,N41-N64,N80-N98)
112	1			Accidents (unintentional injuries) (V01-X59,Y85-Y86)
113	1			Transport accidents (V01-V99,Y85)
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)
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)
116				Water, air and space, and other and unspecified transport accidents and their sequelae (V90-V99,Y85)
117	1			Nontransport accidents (W00-X59,Y86)
118				Falls (W00-W19)
119				Accidental discharge of firearms (W32-W34)
120				Accidental drowning and submersion (W65-W74)
121				Accidental exposure to smoke, fire and flames (X00-X09)
122				Accidental poisoning and exposure to noxious substances (X40-X49)
123				Other and unspecified nontransport accidents and their sequelae (W20-W31,W35-W64,W75-W99,X10-X39,X50-X59,Y86)
124	1	1		Intentional self-harm (suicide) (*U03,X60-X84,Y87.0)
125		1		Intentional self-harm (suicide) by discharge of firearms (X72-X74)
126		1		Intentional self-harm (suicide) by other and unspecified means and their sequelae (*U03,X60-X71,X75-X84,Y87.0)
127	1			Assault (homicide) (*U01-*U02,X85-Y09,Y87.1)
128				Assault (homicide) by discharge of firearms (*U01.4,X93-X95)
129				Assault (homicide) by other and unspecified means and their sequelae (*U01.0-*U01.3,*U01.5-*U01.9,*U02,X85-X92,X96-Y09,Y87.1)
130				Legal intervention (Y35,Y89.0)
131	1			Events of undetermined intent (Y10-Y34,Y87.2,Y89.9)
132				Discharge of firearms, undetermined intent (Y22-Y24)
133				Other and unspecified events of undetermined intent and their sequelae (Y10-Y21,Y25-Y34,Y87.2,Y89.9)
134				Operations of war and their sequelae (Y36,Y89.1)
135				Complications of medical and surgical care (Y40-Y84,Y88)