

Codebook for the 2022 Linked Mortality File (LMF)

Mortality Variables

Date Created: 20260108

Number of Variables: 91

Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
SURVEY	Survey Name	Char	SURVEY		
PUBLICID	NHIS Participant Identifier (constructed using survey year, household, family, and person identifiers)	Char	ID		Public-use identifier for NHIS participants. For information on how to create PUBLICID from the public-use data, please see Appendix II in the Methods and Analytic Considerations documentation found here: https://www.cdc.gov/nchs/linked-data/mortality-files/index.html
SEQN	NHANES Respondent Sequence Number	Num	ID		Public use identifier assigned by NCHS. Researchers linking to NHANES III and 1999-2020 NHANES should use SEQN.
AGEHOMEX	Age at Home Exam	Num			Only applicable for: NHANES III
AGEINTV	Age at Interview	Num			Only applicable for: NHIS (1985-2021)
ELIGSTAT	Eligibility Status for Mortality Follow-up	Num			Survey participants are defined as ineligible for linkage if they had insufficient identifying data to create a SURVEY submission record. Please note that all survey participants are included on the linked SURVEY files regardless of linkage eligibility.
			1	1: Eligible	
			3	3: Ineligible	
MORTSTAT	Final Mortality Status	Num			Blank values imply linkage ineligibility. The MORTSTAT variable is NCHS's final determination of vital status and should be used as an outcome variable and to calculate survival. Codes are assigned depending on eligibility and vital status.
			0	0: Linkage eligible, assumed alive	
			1	1: Linkage eligible, assumed deceased based on NDI linkage	
			2	2: Linkage eligible, assumed deceased from non-NDI source	

¹ Annual Mortality Multiple Cause-of-Death Record Layout Files: https://www.cdc.gov/nchs/nvss/mortality_public_use_data.htm (accessed on January 2026).

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			Missing	..: Ineligible for data linkage	
MORTSRCE_DC	Mortality Source: Death Certificate Match	Num			MORTSRCE_DC=1 indicates that mortality status was obtained from a death certificate as part of a survey operation. Variable is available for NHANES III.
			1	1: Mortality status obtained from a death certificate	
			Missing	..: Assumed alive, ineligible for linkage, or death by source other than death certificate match	
MORTSRCE_DCL	Mortality Source: Data Collection	Num			MORTSRCE_DCL=1 indicates that death information was obtained from the survey record. Variable is available for NHANES III.
			1	1: Death information obtained from a proxy decedent interview	
			Missing	..: Assumed alive, ineligible for linkage, or death by source other than data collection	
MORTSRCE_NDI	Mortality Source: NDI Match	Num			MORTSRCE_NDI=1 indicates that mortality status was ascertained through a probabilistic match to a National Death Index (NDI) record.
			1	1: Mortality status ascertained through linkage to the NDI	
			Missing	..: Assumed alive, ineligible for linkage, or death by source other than NDI linkage	
AGEDEATH	Age at Death	Num			A blank value implies ineligible or assumed alive. Misreporting or discrepancies in reported age at interview or date of birth may result in values for age at death that are inconsistent with interview age.

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AGEPRALV	Age When Last Presumed Alive	Num			A blank value implies ineligible or assumed deceased. Misreporting or discrepancies in reported age at interview or date of birth may result in values for age when last presumed alive that are inconsistent with interview age.
CAUSEAVL	Cause of Death Data Available	Num			Death certificate data is available only for cases where the variable MORTSTAT=1 and MORTSRCE_NDI = 1. Users should note that it is possible to have an NDI match but no cause of death data available.
			0	0: No	
			1	1: Yes	
			Missing	∴ Assumed alive or ineligible for mortality follow-up	
NUMENTAX	Number of Entity Axis Conditions	Num			
			0-20	Code range 00 - 20	
			Missing	∴ Cause of death code not available	
COND_1	Entity Axis 1st Condition	Char			
COND_2	Entity Axis 2nd Condition	Char			
COND_3	Entity Axis 3rd Condition	Char			
COND_4	Entity Axis 4th Condition	Char			
COND_5	Entity Axis 5th Condition	Char			
COND_6	Entity Axis 6th Condition	Char			

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Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
COND_7	Entity Axis 7th Condition	Char			
COND_8	Entity Axis 8th Condition	Char			
COND_9	Entity Axis 9th Condition	Char			
COND_10	Entity Axis 10th Condition	Char			
COND_11	Entity Axis 11th Condition	Char			
COND_12	Entity Axis 12th Condition	Char			
COND_13	Entity Axis 13th Condition	Char			
COND_14	Entity Axis 14th Condition	Char			
COND_15	Entity Axis 15th Condition	Char			
COND_16	Entity Axis 16th Condition	Char			
COND_17	Entity Axis 17th Condition	Char			
COND_18	Entity Axis 18th Condition	Char			
COND_19	Entity Axis 19th Condition	Char			
COND_20	Entity Axis 20th Condition	Char			
AGEMEC	Age at MEC Exam	Num			Only applicable for: NHANES III, Continuous NHANES (1999-2020)

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Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
AGESCREEN	Age at Screener Interview	Num			Only applicable for: NHANES III, Continuous NHANES (1999-2020)
DOBDAY	Day of Birth	Num			Day of birth from SURVEY record.
			1-31	Day 1 - 31	
			Missing	.:Missing	
DOBMONTH	Month of Birth	Num			Month of birth from SURVEY record.
			1	1: January	
			2	2: February	
			3	3: March	
			4	4: April	
			5	5: May	
			6	6: June	
			7	7: July	
			8	8: August	
			9	9: September	
			10	10: October	
			11	11: November	
			12	12: December	
			Missing	.: Missing	
DOBYEAR	Year of Birth	Num			Year of birth from SURVEY record. Improbable years of birth may be present on survey records.
			1880-2021	Year 1880 - 2021	
			Missing	.: Missing	

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DODDAY	Day of Death	Num			Blank values imply linkage ineligibility or assumed alive.
			1-31	Day 1 - 31	
			Missing	.: Ineligible or assumed alive	
DODMONTH	Month of Death	Num			Blank values imply linkage ineligibility or assumed alive.
			1	1: January	
			2	2: February	
			3	3: March	
			4	4: April	
			5	5: May	
			6	6: June	
			7	7: July	
			8	8: August	
			9	9: September	
			10	10: October	
			11	11: November	
			12	12: December	
			Missing	.: Ineligible or assumed alive	
DODYEAR	Year of Death	Num			Blank values imply linkage ineligibility or assumed alive.
			1986-2022	Year 1986 - 2022	
			Missing	.: Ineligible or assumed alive	

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Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
HOMEXDAY	Day of Home Exam	Num			Only applicable for: NHANES III
			1-31	Day 1 - 31	
			Missing	..: No Home Exam	
HMEMONTH	Month of Home Exam	Num			Only applicable for: NHANES III
			1	1: January	
			2	2: February	
			3	3: March	
			4	4: April	
			5	5: May	
			6	6: June	
			7	7: July	
			8	8: August	
			9	9: September	
			10	10: October	
			11	11: November	
			12	12: December	
			Missing	..: No Home Exam	
HOMEXYEAR	Year of Home Exam	Num			Only applicable for: NHANES III
			1988-1994	Year 1988 - 1994	
			Missing	..: No Home Exam	
INTVDAY	Day of Interview	Num			Only applicable for: NHIS (1986-2021)
			1-31	Day 1 - 31	

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Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
			Missing	..: Missing interview day	
INTVMONTH	Month of Interview	Num			Only applicable for: NHIS (1986-2021)
			1	1: January	
			2	2: February	
			3	3: March	
			4	4: April	
			5	5: May	
			6	6: June	
			7	7: July	
			8	8: August	
			9	9: September	
			10	10: October	
			11	11: November	
			12	12: December	
			Missing	..: Missing interview month	
INTVYEAR	Year of Interview	Num			Only applicable for: NHIS (1986-2021)
			1986-2022	Year 1986 - 2022	
			Missing	..: Missing interview year	
MECDAY	Day of MEC Exam	Num			Only applicable for: NHANES III, Continuous NHANES (1999-2020)
			1-31	Day 1 - 31	
			Missing	..: No MEC Exam	

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MECMONTH	Month of MEC Exam	Num			Only applicable for: NHANES III, Continuous NHANES (1999-2020)
			1	1: January	
			2	2: February	
			3	3: March	
			4	4: April	
			5	5: May	
			6	6: June	
			7	7: July	
			8	8: August	
			9	9: September	
			10	10: October	
			11	11: November	
			12	12: December	
			Missing	..: No MEC Exam	
MECYEAR	Year of MEC Exam	Num			Only applicable for: NHANES III, Continuous NHANES (1999-2020)
			1988-2020	Year 1988 - 2020	
			Missing	..: No MEC Exam	
NUMRAXCN	Number of Record Axis Conditions	Num			
			0-20	Code range 00 - 20	
			Missing	..: Cause of death code not available	
RCOND_1	Record Axis 1st Condition	Char			

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Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
RCOND_2	Record Axis 2nd Condition	Char			
RCOND_3	Record Axis 3rd Condition	Char			
RCOND_4	Record Axis 4th Condition	Char			
RCOND_5	Record Axis 5th Condition	Char			
RCOND_6	Record Axis 6th Condition	Char			
RCOND_7	Record Axis 7th Condition	Char			
RCOND_8	Record Axis 8th Condition	Char			
RCOND_9	Record Axis 9th Condition	Char			
RCOND_10	Record Axis 10th Condition	Char			
RCOND_11	Record Axis 11th Condition	Char			
RCOND_12	Record Axis 12th Condition	Char			
RCOND_13	Record Axis 13th Condition	Char			
RCOND_14	Record Axis 14th Condition	Char			
RCOND_15	Record Axis 15th Condition	Char			
RCOND_16	Record Axis 16th Condition	Char			

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Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
RCOND_17	Record Axis 17th Condition	Char			
RCOND_18	Record Axis 18th Condition	Char			
RCOND_19	Record Axis 19th Condition	Char			
RCOND_20	Record Axis 20th Condition	Char			
SA_FA_WGT_ADJ	Linkage-Eligibility Adjusted Sample Adult Weight - Final Annual	Num			This variable is only populated for NHIS 1997-2021 sample adult participants. Values reflect linkage eligibility adjusted sampling weights for sample adults. Blank values represent those ineligible or not a sample adult. The sample adult sampling weight is not applicable for 1987-1996 NHIS analyses and is therefore left blank.
SC_FA_WGT_ADJ	Linkage-Eligibility Adjusted Sample Child Weight - Final Annual	Num			This variable is only populated for NHIS 1997-2021 sample child participants. Values reflect linkage eligibility adjusted sampling weights for sample children. Blank values represent those ineligible or not a sample child. The sample child sampling weight is not applicable for 1987-1996 NHIS analyses and is therefore left blank.
SA_L_WGT_ADJ	Linkage-Eligibility Adjusted Sample Adult Weight - Longitudinal	Num			This variable is only populated for NHIS 2020 participants on the sample adult longitudinal file. Use for analyses of data from 2019 and 2020 for the same individuals. Values reflect linkage eligibility adjusted sampling weights. Blank values represent those ineligible or sample adults not in the sample adult longitudinal file.
SA_P_WGT_ADJ	Linkage-Eligibility Adjusted Sample Adult Weight - Partial	Num			This variable is only populated for NHIS 2020 participants on the sample adult partial file. Use for combining data from multiple years that include 2019 and 2020. Values reflect linkage eligibility adjusted sampling weights. Blank values represent those ineligible or a sample adult not in the sample adult partial file.

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Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
FA_WGT_ADJ	Linkage-Eligibility Adjusted Weight - Final Annual	Num			This variable is only populated for NHIS 1987-2014 participants. Values reflect linkage eligibility adjusted sampling weights at the person level. Blank values represent those ineligible. For 1986 NHIS, there is no eligibility adjusted sampling weight and is therefore left blank. For 1986 NHIS, NCHS recommends using WTFA from the public-use files.
SCRNDAY	Day of Screener Interview	Num			Only applicable for: NHANES III, Continuous NHANES (1999-2020)
			1-31	Day 1 - 31	
			Missing	..: No Screener Interview	
SCRMONTH	Month of Screener Interview	Num			Only applicable for: NHANES III, Continuous NHANES (1999-2020)
			1	1: January	
			2	2: February	
			3	3: March	
			4	4: April	
			5	5: May	
			6	6: June	
			7	7: July	
			8	8: August	
			9	9: September	
			10	10: October	
			11	11: November	
			12	12: December	
			Missing	..: No Screener Interview	
SCRNYEAR	Year of Screener Interview	Num	1988-2020		Only applicable for: NHANES III, Continuous NHANES (1999-2020)

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Variable Name	Variable (VAR) Label	VAR Type	Range of Values	Value Description	Notes ¹
UCOD_113	ICD-10 Underlying Cause of Death 113 Groups Recode (all years)	Char			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Please refer to the 'Mortality Multiple Cause-of-Death Record Layout' for additional detailed variable descriptions (See link in footnote below).
			001-135	Code range 001 - 135	
			Missing	Blank: Cause of death data not available	
UCOD_282	ICD-9 Underlying Cause of Death 282 Groups Recode (available up to 1998)	Char			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Please refer to the 'Mortality Multiple Cause-of-Death Record Layout' for additional detailed variable descriptions (See link in footnote below).
			00300-35800	Code range 00300 - 35800	
			Missing	Blank: Cause of death data not available or death after 1998	
UCOD_34	ICD-9 Underlying Cause of Death 34 Groups Recode (available up to 1998)	Char			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Please refer to the 'Mortality Multiple Cause-of-Death Record Layout' for additional detailed variable descriptions (See link in footnote below).
			010-370	Code range 010 - 370	
			Missing	Blank: Cause of death data not available or death after 1998	
UCOD_358	ICD-10 Underlying Cause of Death 358 Groups Recode (available 1999 forward)	Char			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Please refer to the 'Mortality Multiple Cause-of-Death Record Layout' for additional detailed variable descriptions (See link in footnote below).
			001-456	Code range 001 - 456	
			Missing	Blank: Cause of death data not available or death before 1999	

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UCOD_39	ICD-10 Underlying Cause of Death 39 Groups Recode (available 1999 forward)	Char			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Please refer to the 'Mortality Multiple Cause-of-Death Record Layout' for additional detailed variable descriptions (See link in footnote below).
			001-042	Code range 001 - 042	
			Missing	Blank: Cause of death data not available or death before 1999	
UCOD_72	ICD-9 Underlying Cause of Death 72 Groups Recode (available up to 1998)	Char			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Please refer to the 'Mortality Multiple Cause-of-Death Record Layout' for additional detailed variable descriptions (See link in footnote below).
			010-840	Code range 010 - 840	
			Missing	Blank: Cause of death data not available or death after 1998	
ICD_10REV	ICD-10 Underlying Cause of Death (available 1999 forward)	Char			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. The underlying cause of death code is coded according to the 10th revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death (ICD-10). The variable ICD_10REV is a four position, left-justified character variable with an alpha character in the first position and an implied decimal point after the third position. For those ICD-10 causes that do not have a 3rd digit, the 4th position of ICD_10REV is blank.
ICD_9REV	ICD-9 Underlying Cause of Death (available up to 1998)	Char			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. The underlying cause of death code is coded according to the 9th revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death (ICD-9) for respondent deaths occurring through 1998. The variable ICD_9REV is a four position, left-justified character variable with an implied decimal point after the third position. For those ICD-9 causes that do not have a 4th digit, the 4th position of ICD_9REV is blank.

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DIABETES	Diabetes Flag from Multiple Cause of Death (MCOD)	Num			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Variable indicates if a diagnosis code related to diabetes was identified in cause of death information.
			0	0: No	
			1	1: Yes – Condition listed as a multiple cause of death (MCOD)	
			Missing	.: Assumed alive, ineligible for mortality follow-up, or MCOD not available	
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HIPFRACT	Hip Fracture Flag from Multiple Cause of Death (MCOD)	Num			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Variable indicates if a diagnosis code related to hip fracture was identified in cause of death information.
			0	0: No	
			1	1: Yes – Condition listed as a multiple cause of death (MCOD)	
			Missing	.: Assumed alive, ineligible for mortality follow-up, or MCOD not available	
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HYPERTEN	Hypertension Flag from Multiple Cause of Death (MCOD)	Num			Blank values imply linkage ineligibility, assumed alive, or cause of death information unavailable. Variable indicates if a diagnosis code related to hypertension was identified in cause of death information.
			0	0: No	
			1	1: Yes – Condition listed as a multiple cause of death (MCOD)	
			Missing	.: Assumed alive, ineligible for mortality follow-up, or MCOD not available	
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