2023 National Survey of College Graduates
Recode Variable Documentation
Final
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Contents

Introduction

The 2023 NSCG data file primarily reflects information collected directly from the questionnaire responses. Some additional information is added to the 2023 NSCG data file using historical data. For example, degree information is sorted to display the highest to fifth highest degree a respondent has earned along with their most recently earned degree and first bachelor's degree.

In addition to questionnaire responses, the 2023 NSCG public use data file contains other variables of interest created for the convenience of data users. These variables are derived from existing information in the file and are referred to as recodes. In this document, we will provide descriptions of all recode variables and algorithms used to create them. Please see Appendix A for a full list of recoded variables found in the 2023 NSCG public-use dataset. The SESTAT name and input variables associated with each recode are also given in that table. We give an example of SAS code used to produce recoded variables in Appendix B. In the body of the document we describe general algorithms that are used to generate the multiple recode variables. We then describe individual recodes in order of appearance of the related variables in the survey questionnaire.

General Recode Algorithms

There are many situations where the same algorithm is used to generate multiple recode variables. We describe these algorithms in detail below, including the input variables and outcome variables.

A. Education Field-of-Study Variables

For questions involving field of study, respondents enter a three-digit education code when completing the paper questionnaire. Respondents to the web survey select their broad field of study from a list and then select a more detailed field from a second list, when appropriate. For each field of study collected from a respondent, there can be up to 4 associated variables.

1. Respondent-Entered Value—the respondent selects a 3-digit field of study code from the options listed on the back of the paper questionnaire. While these variables are not considered recodes, post-collection processing does convert this code into a six-digit value via the Education and Occupation Codes Crosswalk.
2. Best Code—Respondent-entered values go through a system of checks that apply several criteria to determine if the respondent-entered value best describes the field of study. The end result of this best-coding process is stored in a new variable. Again, we do not consider these variables to be recodes, but we do note that the values are also transformed to six-digit codes using the Education and Occupation Codes Crosswalk.
3. Minor Group, Field of Study—these are recode variables that group best code fields of study into broader categories for the minor group variable. The variable is created by taking the first two characters of the six-digit best code.
4. Major Group, Field of Study— these are recode variables that group the minor group fields of study into even broader categories for the major group variable. The variable is created by taking the first character of the six-digit best code.

5. Broad Group, Field of Study— these are recode variables that group the major group fields of study into even broader categories than the major group variable. The variable is created by combining the first five categories of the Major Group variable into a single category while the other categories remain separate. It is only available for select degrees.

For the 2023 NSCG, the variables that are recoded this way are given in the table below.

Best Code Variable Name	Respondent-Entered Variable Name	Minor Group Variable Name	Major Group Variable Name	Broad Group Variable Name
N2BAMED	N2BAMEDX	NBAMENG	NBAMEMG	NBAMEBG
N2BANED	N2BANEDX	NBANENG	NBASEMG	-
N2MRMED	N2MRMEDX	NMRMENG	NMRMEMG	NMRMEBG
N2MRNED	N2MRNEDX	NMRNENG	NMRSEMG	-
N2ACED	N2ACEDX	N2ACEDNG	N2ACEDMG	-
N2DGRMED	N2HDMEDX	NDGMENG	NDGMEMG	NDGMEBG
N2HDNED	N2HDNEDX	NHDNENG	NHDSEMG	-
N2D2MED	N2D2MEDX	ND2MENG	ND2MEMG	-
N2D2NED	N2D2NEDX	ND2NENG	ND2SEMG	-
N2D3MED	N2D3MEDX	ND3MENG	ND3MEMG	-
N2D3NED	N2D3NEDX	ND3NENG	ND3SEMG	-
N2D4MED	N2D4MEDX	ND4MENG	ND4MEMG	-
N2D4NED	N2D4NEDX	ND4NENG	ND4SEMG	-
N2D5MED	N2D5MEDX	ND5MENG	ND5MEMG	-
N2D5NED	N2D5NEDX	ND5NENG	ND5SEMG	-

Note: In response to a disclosure risk avoidance decision, the NSCG field of study best codes approved for inclusion on the public-use file changed beginning with the 2019 survey cycle. Given the changes in codes between survey cycles, the variable name was changed to include "N3" rather than "N2" for some field of study variables.

B. Occupation Variables

For questions involving primary job functions, respondents enter a three-digit occupation code when completing the paper questionnaire. Respondents to the web survey select their broad field of study from a list and then select a more detailed field from a second list, when appropriate. For each situation where we collect occupation information, there can be up to 4 associated variables.

1. Respondent-Entered Value—the respondent selects a 3-digit occupation code from the options listed on the back of the paper questionnaire. While these variables are not considered recodes, post-collection processing does convert these three-digit values to a six-digit value via the Education and Occupation Codes Crosswalk.
2. Best Code—Respondent-entered values go through a system of checks that apply several criteria to determine if the respondent-entered value best describes the primary job responsibility. The result of this best-coding process is stored in a new variable. As with the respondent-entered code, the best code is not considered a recode, but is transformed to six-digit codes using the Education and Occupation Codes Crosswalk.
3. Minor Group, Occupation—these recode variables group best code occupation codes into broader categories for the minor group variable. The variable is created by taking the first two characters of the six-digit best code.

4. Major Group, Occupation— these recode variables group the minor group occupation codes into even broader categories for the major group variable. The variable is created by taking the first character of the six-digit best code.
5. Broad Group, Occupation— these recode variables group the major group occupation codes into even broader categories for the broad group variable. The variable is created by combining the first five categories of the Major Group variable into a single category while the other categories remain separate.

For the 2023 NSCG, the variables that are recoded this way are given in the table below.

Best Code Variable Name	Respondent-Entered Variable Name	Minor Group Variable Name	Major Group Variable Name	Broad Group Variable Name
N3OCLST	N3OCLSTX	N3OCNLST	N2OCMLST	N2OCBLST
N3OCPR	N3OCPRX	N3OCPRNG	N2OCPRMG	N2OCPRBG

Note: In response to a disclosure risk avoidance decision, the NSCG occupation best codes approved for inclusion on the public-use file changed beginning with the 2019 survey cycle. Given the changes in codes between survey cycles, the variable name was changed to include "N3" rather than "N2" for some occupation variables.

C. Location-Based Variables

Location information is collected from either the respondent or from other data sources. Some variables, for example, the place of birth, are taken from the questionnaire responses. Others, such as the location of the academic institution where a respondent earned a degree, are taken from administrative sources. In the case of academic institutions, we pull location information from the Integrated Postsecondary Education Data System (IPEDS) using the institution name. All location variables are stored at the state or country level using a three-digit code that specifies the state within the United States or the country outside the United States. Each location variable will have two associated recodes— one that gives the larger geographic region containing that location and one that is an indicator for whether the location is within the United States or not. Please see the table below for location, region, and US/non-US flags that can be found on the 2023 NSCG.

Location Variable Name	Region Variable Name	US/Non-US Variable Name
RESPLO3	RESPLOC	RESPLCUS
BTHST	BTHRGN	BTHUS
BAST	BARGN	BADGRUS
D2ST	D2RGN	D2DGRUS
D3ST	D3RGN	D3DGRUS
D4ST	D4RGN	D4DGRUS
D5ST	D5RGN	D5DGRUS
EMST	EMRG	EMUS
FNCCD	FNCRGN	N/A*
HDST	HDRGN	HDDGRUS
MRST	MRRGN	MRDGRUS

* There is no US/Non-US recode variable associated with FNCCD and FNCRGN. This variable denotes the location and region of a foreign country where a respondent has citizenship. These are outside the US by definition; therefore, there is no need for a US/Non-US indicator variable.

The region and US/Non-US recode variables are created as follows.

Three-Digit Location Code	Region Code	US / Non-US Flag
999	M (Missing)	M (Missing)
998	L (Logical Skip)	L (Logical Skip)
997	X (Survey Exclusion / Confidentiality Suppression)	X (Survey Exclusion / Confidentiality Suppression)
000	00 (Suppressed)	X (Survey Exclusion / Confidentiality Suppression)
009, 023, 025, 033, 044, 050, or 085	01 (New England)	Y
034, 036, 042, or 086	02 (Middle Atlantic)	Y
017, 018, 026, 039, 055, or 087	03 (East North Central)	Y
019, 020, 027, 029, 031, 038, 046, or 088	04 (West North Central)	Y
010, 011, 012, 013, 024, 037, 045, 051, 054, or 089	05 (South Atlantic)	Y
001, 021, 028, 047, or 090	06 (East South Central)	Y
005, 022, 040, 048, or 091	07 (West South Central)	Y
004, 008, 016, 030, 032, 035, 049, 056, or 092	08 (Mountain)	Y
002, 006, 015, 041, 053, 060, 066, 067, 069, 071, 072, 076, 078, 079, 081, 082, 083, 084, 093, 095, or 096	09 (Pacific and US Territories)	Y
099	Varies*	Y
990	99 (Unknown/Not Applicable)	N
100 to 199	10 (Europe)	N
200 to 299	20 (Asia)	N
300 to 309	30 (North America)	N
310 to 318	31 (Central America)	N
330 to 359	33 (Caribbean)	N
375 to 399	37 (South America)	N
400 to 499	40 (Africa)	N
500 to 529	50 (Oceania)	N
550 to 599	55 (Abroad, Not Specified)	N

* A state location code of 099 indicates “US Territory, Suppressed”. For these cases it is not possible to determine the region using the above table because the exact location has been suppressed due to confidentiality concerns. The data collection contractor provides the correct region based on the unpublicized location. Because the location is within the US, by definition, we set the US/Non-US flag to Y.

D. Age Groupings

There are two variables derived using five-year categories for age—AGEGR and DIFAGEGR. The input variables for these recodes are AGE and DIFAGE, respectively. In both cases the algorithm is as follows:

AGE / DIFAGE	AGEGR / DIFAGEGR
97	97
98	98
99	99
24 or younger	20
25 to 29	25
30 to 34	30
35 to 39	35
40 to 44	40
45 to 49	45
50 to 54	50
55 to 59	55
60 to 64	60
65 to 69	65
70 or older	70

*DIFAGE and DIFAGEGR have valid values of logical skip (98) when the respondent does not report a disability. For the AGE variable, 98 is not a valid value.

E. Academic Year

The academic year of each earned degree is calculated using both the month and year the degree was awarded. Because academic years end in June, we associate a degree with the academic year as follows. If a degree was earned in January through June or if the month is unknown, the academic year will be the same as the calendar year in which the degree was earned. If the degree was earned in July or later months, it will be considered part of the following academic year. Academic year recodes are created for the most recent degree and the highest degree. The input variables are MRMN and HDMN (month earned) and MRYR and DGRYR (year earned). The outcome variables are MRDACYR and HDACYR. The creation of these variables is given in the table below.

MRYR / DGRYR	MRMN / HDMN	MRDACYR / HDACYR
9997	Any	9997
9998	Anminy	9998
9999	Any	9999
Any Valid Year	1, 2, 3, 4, 5, 6, 99	Same as MRYR / DGRYR
Any Valid Year	7, 8, 9, 10, 11, 12	MRYR + 1 / DGRYR + 1

F. Three-Year Groupings

The academic year of each earned degree is collapsed into three-year groupings based on the calendar year of award. We use the example of MR3YR, which groups the variable MRYR into three-year groups. The value of MR3YR is the floor value of each three-year group for MRYR. For example, MR3YR = 1971 represents 1971 to 1973; while MR3YR = 1974 represents 1974 to 1976, etc. MR3YR is created as follows:

MRYR	MR3YR
9997	9997
9998	9998
9999	9999
Any Valid Year	3 * INT(MRYR / 3)

The input and output variables for these recodes are given in the table below.

Degree Year Variable	Three-Year Grouping Variable
MRYR	MR3YR
BAYR	BAAYR3
DGRYR	HDACY3
D2YR	D23YR
D3YR	D33YR
D4YR	D43YR
D5YR	D53YR

G. Five-Year Groupings

The academic year of each earned degree is collapsed into five-year groupings based on the calendar year of award. We use the example of MR5YR, which groups the variable MRYR into five-year groups. The value of MR5YR is the floor value of each five-year group for MRYR. For example, MR5YR = 1970 represents 1970 to 1974; while MR3YR = 1975 represents 1975 to 1979, etc. MR5YR is created as follows:

MRYR	MR5YR
9997	9997
9998	9998
9999	9999
Any Valid Year	5 * INT(MRYR / 5)

The input and output variables for these recodes are given in the table below.

Degree Year Variable	Five-Year Grouping Variable
MRYR	MR5YR
BAYR	BAAYR5
DGRYR	HDAY5
D2YR	D25YR
D3YR	D35YR
D4YR	D45YR
D5YR	D55YR

Specific Recode Algorithms

Several recode algorithms are used once per survey cycle. There may be several input variables and only one outcome variable. There are several situations where there are multiple recode variables generated based on the same series of questions. We group those together in this section.

A. Employment-Related Recodes

There are several recode variables associated with the basic demographic information requested of all respondents. Please note that old cohort respondents are not asked the full series of demographic variables.

EMTP

This variable describes the type of employer based on separate categories for educational institution and other employers. Three variables are used to generate EMTP: EMED (Y/N indicator for employer being an educational institution), NEDTP (employer type, disregarding educational institution status), and EDTP (type of educational institution for employer). EMPT is created as follows:

EMED	EDTP	NEDTP	EMTP
L	L	L	L (Logical Skip)
Y	1	Any	01 (elementary, middle, or secondary school)
Y	2	Any	02 (two-year, technical, or junior college)
Y	3	Any	03 (four-year college or university)
Y	4	Any	04 (medical school)
Y	5	Any	05 (university research institution)
Y	6	Any	06 (other educational institution)
N	L	3	10 (Private-for-profit (non-educational institution)
N	L	4	11 (Private-for-non-profit (non-educational institution)
N	L	1	12 (Self-employed, not incorporated (non-educational institution)
N	L	2	13 (Self-employed, incorporated (non-educational institution)
N	L	5	14 (Local government (non-educational institution)
N	L	6	15 (State government (non-educational institution)
N	L	7	16 (U.S. military (non-educational institution)
N	L	8	17 (U.S. government (non-educational institution)
N	L	9	18 (Other (non-educational institution)

Note that these criteria are applied in the order in which they appear in the table. Please also note that the value NEDTP = 10 (and consequently EMTP = 19) are only valid for the international SDR survey. Therefore, we do not expect these values in the NSCG.

EMSECDT

This variable describes the type of employer based on separate categories for educational institution and other employers at a higher level of aggregation than EMTP. Three variables are used to generate EMSECDT: EMED (Y/N indicator for employer being an educational institution), NEDTP (employer type, disregarding educational institution status), and EDTP (type of educational institution for employer). EMSECDT is created as follows:

EMED	EDTP	NEDTP	EMTP
L	L	L	L (Logical Skip)
Y	3, 4, 5	Any	11 (4-year college/university, medical school, university-based research institute)
Y	1, 2, 6	Any	12 (two-year, technical, or junior college and pre-college institutions)
N	L	2, 3, 9	21 (Business/Industry for-profit (non-educational institution)
N	L	1	22 (Business/industry, self-employed, not incorporated (non-educational institution)
N	L	4	23 (Business/industry, not for profit (non-educational institution)
N	L	7, 8	31 (U.S. Federal government (non-educational institution)
N	L	5, 6	32 (U.S. state or local government (non-educational institution)

Note that these criteria are applied in the order in which they appear in the table.

EMSECSM

This variable describes the sector in which the respondent is employed. Two variables are used to generate EMTP: EMED (Y/N indicator for employer being an educational institution) and NEDTP (employer type, disregarding educational institution status). EMSECSM is created as follows:

EMED	NEDTP	EMSECSM
L	Any	L (Logical Skip)
M	Any	M (Missing)
X	Any	X (Survey Exclusion / Confidentiality Suppression)
Y	Any	1 (Educational Institution)
N	5, 6, 7, 8	2 (Government)
N	1, 2, 3, 4, or 9	3 (Business / Industry)

LFSTAT

This variable describes the respondent's labor force status. Input variables to this recode are WRKG (Y/N indicator for whether the respondent is working), LOOKWK (Y/N indicator for whether the respondent was looking for work), and NWLAY (Y/N indicator for whether the respondent was not working due to a layoff). LFSTAT is created as follows:

WRKG	LOOKWK	NWLAY	LFSTAT
Y	L	L	1 (Employed)
N	N	Y	2 (Unemployed)
N	Y	Any	2 (Unemployed)
N	N	N	3 (Not in Labor Force)

WKSWK

This variable gives the number of weeks per year in which the respondent is working. The input variables to this recode are WKSYR (indicates if the respondent's salary is based on a 52-week year) and WKSLYR (the number of weeks per year the respondent's salary is based on, if less than 52). The variable is created as follows:

WKSYR	WKSLYR	WKSWK
L	Any	98
M	Any	99
X	Any	97
Y	98	52
N	1 – 51	same value as WKSLYR

B. Work Activity Recodes

The work activity questions (A24 and A25 in the 2023 NSCG questionnaires) ask the respondent to indicate whether they perform any of fourteen different work activities and then to indicate which are their primary and secondary activities. Based on the primary and secondary responses (WAPRI and WASEC), Seven recode variables collapse the fourteen possible answers to the work activities module into broader categories. These outcome variables are: ACTCAP, ACTDED, ACTMGT, ACTRD, ACTRDT, ACTRES, and ACTTCH. There is significant overlap across these variables. Five other summary variables for work activities are created—WASPRSM, WASCSM, WAPRRD, WAPRSM2, and WASCSM2. The algorithms for creating the work activity recodes are given below by variable name.

Note that in practice, we do not expect to see values of M (missing) or X (survey exclusion/confidentiality suppression) in the input or output variables for the work activity recodes. We include them in the algorithm for completeness. However, imputation and editing procedures will have replaced these values with valid responses before the recode generation process begins.

ACTCAP

This is a Y/N indicator for whether a respondent's primary or secondary work activity involves computer applications. The variable is created as follows:

WAPRI	WASEC	ACTCAP
L	L	L (Logical Skip)
M	M	M (Missing)
X	X	X (Survey Exclusion/Confidentiality Suppression)
06	00 – 14	Y (Yes)
01 – 14	06	Y (Yes)
01, 02, 03, 04, 05, 07, 08, 09, 10, 11, 12, 13, or 14	00, 01, 02, 03, 04, 05, 07, 08, 09, 10, 11, 12, 13, or 14	N (No)

ACTDED

This is a Y/N indicator for whether a respondent's primary or secondary work activity involves development or design. The variable is created as follows:

WAPRI	WASEC	ACTDED
L	L	L (Logical Skip)
M	M	M (Missing)
X	X	X (Survey Exclusion/Confidentiality Suppression)
04, 05	00 – 14	Y (Yes)
01 – 14	04, 05	Y (Yes)
01, 02, 03, 06, 07, 08, 09, 10, 11, 12, 13, or 14	00, 01, 02, 03, 06, 07, 08, 09, 10, 11, 12, 13, or 14	N (No)

ACTMGT

This is a Y/N indicator for whether a respondent's primary or secondary work activity involves management or sales. The variable is created as follows:

WAPRI	WASEC	ACTMGT
L	L	L (Logical Skip)
M	M	M (Missing)
X	X	X (Survey Exclusion/Confidentiality Suppression)
01, 07, 08, 09, 11, or 12	00 – 14	Y (Yes)
01 – 14	01, 07, 08, 09, 11, or 12	Y (Yes)
02, 03, 04, 05, 06, 10, 13, or 14	00, 02, 03, 04, 05, 06, 10, 13, or 14	N (No)

ACTRD

This is a Y/N indicator for whether a respondent's primary or secondary work activity involves basic research, applied research, development or design. The variable is created as follows:

WAPRI	WASEC	ACTRD
L	L	L (Logical Skip)
M	M	M (Missing)
X	X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04, 05	00 – 14	Y (Yes)
01 – 14	02, 03, 04, 05	Y (Yes)
01, 06, 07, 08, 09, 10, 11, 12, 13, or 14	00, 01, 06, 07, 08, 09, 10, 11, 12, 13, or 14	N (No)

ACTRDT

This is a Y/N indicator for whether a respondent's primary or secondary work activity involves basic research, applied research, development, design or teaching. The variable is created as follows:

WAPRI	WASEC	ACTRDT
L	L	L (Logical Skip)
M	M	M (Missing)
X	X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04, 05, 13	00 – 14	Y (Yes)
01 – 14	02, 03, 04, 05, 13	Y (Yes)
01, 06, 07, 08, 09, 10, 11, 12, or 14	00, 01, 06, 07, 08, 09, 10, 11, 12, or 14	N (No)

ACTRES

This is a Y/N indicator for whether a respondent's primary or secondary work activity involves basic or applied research. The variable is created as follows:

WAPRI	WASEC	ACTRES
L	L	L (Logical Skip)
M	M	M (Missing)
X	X	X (Survey Exclusion/Confidentiality Suppression)
02, 03	00 – 14	Y (Yes)
01 – 14	02, 03	Y (Yes)
01, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, or 14	00, 01, 04, 05 06, 07, 08, 09, 10, 11, 12, 13, or 14	N (No)

ACTTCH

This is a Y/N indicator for whether a respondent's primary or secondary work activity involves teaching. The variable is created as follows:

WAPRI	WASEC	ACTTCH
L	L	L (Logical Skip)
M	M	M (Missing)
X	X	X (Survey Exclusion/Confidentiality Suppression)
13	00 – 14	Y (Yes)
01 – 14	13	Y (Yes)
01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, or 14	00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, or 14	N (No)

WAPRSM

This variable summarizes or collapses the primary work activity into broader categories that are mutually exclusive. The variable is created as follows:

WAPRI	WAPRSM
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04, 05	1 (Research and Development)
13	2 (Teaching)
01, 07, 08, 11, 12	3 (Management and Administration)
06	4 (Computer Applications)
09, 10, 14	5 (Other)

WASCSM

This variable summarizes or collapses the secondary work activity into broader categories that are mutually exclusive. The variable is created as follows:

WASEC	WASCSM
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04, 05	1 (Research and Development)
13	2 (Teaching)
01, 07, 08, 11, 12	3 (Management and Administration)
06	4 (Computer Applications)
09, 10, 14	5 (Other)
00	6 (No Secondary Activity)

WAPRRD

This variable summarizes or collapses the primary work activity into broader categories that are mutually exclusive. The variable is created as follows:

WASEC	WAPRRD
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04	Y (Research and Development)
01, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14	N (Other)

WAPRSM2

This variable summarizes or collapses the primary work activity into broader categories that are mutually exclusive. The variable is created as follows:

WAPRI	WAPRSM2
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04	1 (Research and Development)
13	2 (Teaching)
01, 07, 08, 11, 12	3 (Management and Administration)
06	4 (Computer Applications)
05, 09, 10, 14	5 (Other)

WASCSM2

This variable summarizes or collapses the secondary work activity into broader categories that are mutually exclusive. The variable is created as follows:

WASEC	WASCSM2
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04	1 (Research and Development)
13	2 (Teaching)
01, 07, 08, 11, 12	3 (Management and Administration)
06	4 (Computer Applications)
05, 09, 10, 14	5 (Other)
00	6 (No Secondary Activity)

WAPRSM3

This variable summarizes or collapses the primary work activity into broader categories that are mutually exclusive. The variable is created as follows:

WAPRI	WAPRSM3
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04	1 (Research and Development)
13	2 (Teaching)
01, 07, 08, 11, 12	3 (Management and Administration)
06	4 (Computer Applications)
05	5 (Design)
09, 10, 14	6 (Other)

WASCSM3

This variable summarizes or collapses the secondary work activity into broader categories that are mutually exclusive. The variable is created as follows:

WASEC	WASCSM3
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
02, 03, 04	1 (Research and Development)
13	2 (Teaching)
01, 07, 08, 11, 12	3 (Management and Administration)
06	4 (Computer Applications)
05	5 (Design)
09, 10, 14	6 (Other)
00	7 (No Secondary Activity)

C. Demographic Recodes

There are several recode variables associated with the basic demographic information requested of all respondents. Please note that respondents who have already reported data on sex, race and ethnicity in a prior wave of the survey are not asked the full series of demographic questions as we have already collected this information from them. Their previous responses to these questions are merged on to the current data and demographic recodes are created using that information.

CTZN

This variable describes a respondent's citizenship status. It is created using input variables CTZUSIN (Y/N indicator for US citizen), CTZUS (categorical variable describing the basis of US citizenship), and CTZFOR (categorical variable describing a foreign citizen's US resident status). CTZN is created as follows:

CTZUSIN	CTZUS	CTZFOR	CTZN
L	L	L	L (Logical Skip)
M	M	M	M (Missing)
X	X	X	X (Survey Exclusion/Confidentiality Suppression)
Y	1, 2	L	1 (US Citizen, native)
Y	3	L	2 (US Citizen, naturalized)
N	L	1	3 (Non-US citizen, Permanent resident)
N	L	2	4 (Non-US citizen, temporary resident)

Note that in practice, we do not expect to see values of M (missing) or X (survey exclusion/confidentiality suppression) in the input or output variables for demographic recodes. Additionally, we do not expect to see values of L (logical skip) for CTZUSIN. We include them in the algorithm for completeness. However, imputation and editing procedures will have replaced these values with valid responses before the recode generation process begins.

HCAPIN

This is a Y/N indicator for whether a respondent reported a disability. It is derived using the variables DIFSEE, DIFHEAR, DIFWALK, DIFLIFT, and DIFCOGN. If *any* of these variable equals 3, 4, or 5 (indicating a moderate or higher level of difficulty) then HCAPIN will equal Y. If *all* of these variables equal 1, 2, or 9 (indicating no difficulty, slight difficulty, or non-applicable) then HCAPIN will equal N. Otherwise, if the input variables are skipped, missing, or excluded due to confidentiality suppression then the same will apply to HCAPIN. We also note that values of L (logical skip), M (missing) and X (survey exclusion/confidentiality suppression) are not expected as all respondents should have answered the disability questions. Editing and imputation procedures will fill these variables with valid values before the disability indicator is created.

DIFSEE	DIFHEAR	DIFWALK	DIFLIFT	DIFCOGN	HCAPIN
L	L	L	L	L	L (Logical Skip)
M	M	M	M	M	M (Missing)
X	X	X	X	X	X (Survey Exclusion/Confidentiality Suppression)
3, 4, 5	Any	Any	Any	Any	Y (Yes)
Any	3, 4, 5	Any	Any	Any	Y (Yes)
Any	Any	3, 4, 5	Any	Any	Y (Yes)
Any	Any	Any	3, 4, 5	Any	Y (Yes)
Any	Any	Any	Any	3, 4, 5	Y (Yes)
1, 2, 9	1, 2, 9	1, 2, 9	1, 2, 9	1, 2, 9	N (No)

MARIND

This is a Y/N indicator for whether the respondent is married or in a marriage-like relationship. It is created by looking at the MARSTA variable. If MARSTA equals 1 then MARIND = Y. Otherwise MARIND = N. We also note that values of L (logical skip), M (missing) and X (survey exclusion / confidentiality suppression) are not expected as all respondents should have answered the marital status question.

Editing and imputation procedures will fill these variables with valid values before the marriage indicator is created.

MARSTA	MARIND
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
1	Y (Yes)
2, 3, 4, 5, 6	N (No)

HISPANIC

This is a Y/N indicator for whether the respondent is of Hispanic origin. It is created by looking at the HISPCAT0 variable. If HISPCAT0 equals Y then HISPANIC = N. Otherwise HISPANIC = Y. We also note that values of L (logical skip), M (missing) and X (survey exclusion / confidentiality suppression) are not expected as all respondents should have answered the Hispanic origin question. Editing and imputation procedures will fill these variables with valid values before the Hispanic indicator is created.

HISPCAT0	HISPANIC
L	L (Logical Skip)
M	M (Missing)
X	X (Survey Exclusion/Confidentiality Suppression)
N	Y (Yes)
Y	N (No)

ASIAN and PACIFIC

In 2023, NSCG changed the way in which it asked about race. Asian and Native Hawaiian or other Pacific Islander categories were expanded collect to more detail. The detailed categories were recoded to create the original ASIAN and PACIFIC variables, as follows.

ASIND	CHINESE	FILIPINO	JAPANESE	KOREAN	VIETNAMESE	O_ASIAN	ASIAN
Y	Any	Any	Any	Any	Any	Any	Y
Any	Y	Any	Any	Any	Any	Any	Y
Any	Any	Y	Any	Any	Any	Any	Y
Any	Any	Any	Y	Any	Any	Any	Y
Any	Any	Any	Any	Y	Any	Any	Y
Any	Any	Any	Any	Any	Y	Any	Y
Any	Any	Any	Any	Any	Any	Y	Y
N	N	N	N	N	N	N	N

HAWAIIAN	CHAMORRO	SAMOAN	O_PACIFIC	PACIFIC
Y	Any	Any	Any	Y
Any	Y	Any	Any	Y
Any	Any	Y	Any	Y
Any	Any	Any	Y	Y
N	N	N	N	N

RACEM

This variable collapses responses to individual race questions into broader categories, without regard to Hispanic origin, as follows.

ASIAN	BLACK	NATIVE	PACIFIC	WHITE	RACEM
Any	Any	Any	Any	Any	6 (Multiple race)
Y	N	N	N	N	1 (Asian only)
N	N	Y	N	N	2 (American Indian/Alaskan Native only)
N	Y	N	N	N	3 (Black only)
N	N	N	N	Y	4 (White only)
N	N	N	Y	N	5 (Native Hawaiian/Pacific Islander only)

The steps in this table are processed in order. RACEM is set to 6 (multiple race) by default. It is changed if any of the other conditions are met. We also note that values of L (logical skip) and M (missing) are not expected as all respondents should have answered the race and ethnicity questions for the new cohort. Previous responses are imported for old cohort respondents. Editing and imputation procedures will fill these variables with valid values before RACEM is created with a few exceptions. Certain unique combinations of racial background have been suppressed. In these cases, values of all racial indicators were set to X (survey exclusion / confidentiality suppression). The above algorithm will place those respondents in the multiple race category, which is appropriate given that those respondents are multi-racial but the exact combination is being suppressed to protect confidentiality.

RACETHM

This variable collapses responses to race questions and Hispanic origin questions as follows.

HISPANIC	ASIAN	BLACK	NATIVE	PACIFIC	WHITE	RACETHM
Y	Any	Any	Any	Any	Any	4 (Hispanic, Any Race)
N	Y	N	N	N	N	1 (Asian, non-Hispanic only)
N	N	N	Y	N	N	2 (American Indian/Alaskan Native, non-Hispanic ONLY)
N	N	Y	N	N	N	3 (Black, non-Hispanic only)
N	N	N	N	N	Y	5 (White, non-Hispanic only)
N	N	N	N	Y	N	6 (Native Hawaiian/Other Pacific Islander, non-Hispanic only)
N	Any	Any	Any	Any	Any	7 (Multiple Race, non-Hispanic)

These steps are processed in the order in which they appear in the table. If at the end of the first six steps, no value of RACETHM has been assigned, then RACETHM will be set to 7. We also note that values of L (logical skip) and M (missing) are not expected as all respondents should have answered the race and ethnicity questions for the new cohort. Previous responses are imported for old cohort respondents. Editing and imputation procedures will fill these variables with valid values before RACEM is created with a few exceptions. We do not expect any suppressed values of HISPANIC. However, certain unique combinations of racial background have been suppressed. In these cases, values of all

racial indicators were set to X (survey exclusion / confidentiality suppression). The above algorithm will assign these respondents a value of 4 (Hispanic, any race) if they are of Hispanic origin or 7 (multiple race, non-Hispanic) if they are not. Again, this is appropriate given that those respondents are multi-racial, but the exact combination is being suppressed to protect confidentiality.

Children in the Household

Respondents are asked to enter the number of children within the household that fall into certain age categories. Collected directly from the questionnaire we have the following age variables:

Questionnaire Variable Name	Ages Represented
CHU2	Under 2
CH25	2 to 5
CH611	6 to 11
CH1218	12 to 18
CH19	19 and Older

In addition to the number-of-children variables collected directly from the questionnaire, we create one additional variable to count the number of children under the age of six—CH6. This variable is created as follows:

CHU2	CH25	CH6
97	97	97
98	98	98
99	99	99
0 to 96	0 to 96	CHU2 + CH25

Note that values of CHU2 and CH25 up to 96 are defined, valid values. However, in practice, high value observed in the data would trigger an anomaly investigation and be corrected. We also note that values of 99 (missing) and 97 (survey exclusion / confidentiality suppression) are not expected in these variables. We do expect values of 98 (logical skip) for households that have no children.

A series of additional recode variables are created to indicate the presence of children within each of those age groupings. The algorithm for creating these indicators is as follows:

Input Variable Values	Outcome Variable Values
97	X
98	L
99	M
0	N
1 – 96	Y

The input and output variables for these recodes are given in the table below.

Input Variable Names	Outcome Variable Names	Indicates Presence of Children Ages…
CHU2	CHU2IN	Under 2
CH25	CH25IN	2 to 5
CH6*	CH6IN	Under 6
CH611	CH611IN	6 to 11
CH1218	CH1218IN	12 to 18
CH19	CH19IN	19 and Older

* Note that CH6 is also a recode variable and must be created before CH6IN.

There is one additional indicator variable for the number of children in the household, but it is created differently than those previously described. The variable CHUN12 is a Y/N indicator for whether there are children under the age of 12 in the household. It is created as follows:

CHU2	CH25	CH611	CHUN12
97	97	97	X
98	98	98	L
99	99	99	M
CHU2 + CH25 + CH611 = 0			N
CHU2 + CH25 + CH611 > 0			Y

D. Top-coding

Top-coding is a statistical disclosure control (SDC) method that replaces reported observations above an upper bound with pre-chosen values to protect the confidentiality of respondents. The NSCG performs top-coding on the SALARY and EARN items. Values were top-coded at the 99.5th percentile such that all sample persons who were equal to or exceeded that value were pooled together. Then, the MEAN was computed for that pool, and their new SALARY/EARN was set equal to that MEAN value.

These are not recodes like the other items listed in this document, but were included here to explain to users the transformed values.

Top-coding for the NSCG was performed BY COHORT. The values for New and Old (returning) respondents are as follows:

SALARY

New Cohort:

0-500000 = $0 through $500,000 (top allowed value)
827838 = Mean of all non-LS salary values over $500,000 (top allowed value)
9999998 = Logical Skip

Old Cohort:

0-500000 = $0 through $500,000 (top allowed value)
976934 = Mean of all non-LS salary values over $500,000 (top allowed value)
9999998 = Logical Skip

EARN

New Cohort:

0-700000 = $0 through $700000 (top allowed value)
1290356 = Mean of all earned income values over $700,000 (top allowed value)
9999998 = Logical Skip

Old Cohort:

0-780000 = $0 through $780000 (top allowed value)
1563491 = Mean of all earned income values over $780,000 (top allowed value)
9999998 = Logical Skip

Appendix A. Recoded Variables in the 2023 NSCG Public-Use Data

Recoded Variable	SESTAT Name	Input Variable(s)
ACTCAP	F_JOB_WRK_ACTIVITY_PRIM_SEC_COMPUTER	WAPRI, WASEC
ACTDED	F_JOB_WRK_ACTIVITY_PRIM_SEC_DEV_DESIGN	WAPRI, WASEC
ACTMGT	F_JOB_WRK_ACTIVITY_PRIM_SEC_MGT_SALES	WAPRI, WASEC
ACTRD	F_JOB_WRK_ACTIVITY_PRIM_SEC_RSRCH_DEV	WAPRI, WASEC
ACTRDT	F_JOB_WRK_ACTIVITY_PRIM_SEC_RSRCH_DEV_TEACH	WAPRI, WASEC
ACTRES	F_JOB_WRK_ACTIVITY_PRIM_SEC_RSRCH	WAPRI, WASEC
ACTTCH	F_JOB_WRK_ACTIVITY_PRIM_SEC_TEACH	WAPRI, WASEC
AGEGR	U_DEM_AGE_GROUP_5_YR_GROUPING	AGE
ASIAN	U_DEM_RACE_ASIAN	ASIND, CHINESE, FILIPINO, JAPANESE, KOREAN, VIETNAMESE, O_ASIAN
BAAYR3	J_ED_BA_DEGREE_AWARD_YR_3_YR_GROUPING	BAYR
BAAYR5	J_ED_BA_DEGREE_AWARD_YR_5_YR_GROUPING	BAYR
BADGRUS	J_ED_BA_SCHOOL_REGION_US_NONUS	BARGN, BAST
BARGN	J_ED_BA_SCHOOL_REGION	BAST
BTHRGN	U_DEM_BIRTH_PLACE_REGION	BTHST
BTHUS	U_DEM_BIRTH_PLACE_REGION_US_NONUS	BTHRGN, BTHST
CH1218IN	W_DEM_CHILDREN_IND_12_18	CH1218
CH19IN	W_DEM_CHILDREN_IND_19	CH19
CH25IN	W_DEM_CHILDREN_IND_2_5	CH25
CH6	W_DEM_CHILDREN_NBR_UNDER_6	CHU2, CH25
CH611IN	W_DEM_CHILDREN_IND_6_11	CH611
CH6IN	W_DEM_CHILDREN_IND_UNDER_6	CH6
CHU2IN	W_DEM_CHILDREN_IND_UNDER_2	CHU2
CHUN12	W_DEM_CHILDREN_UNDER_12_IND	CHU2, CH25, CH611
CTZN	V_DEM_CITIZENSHIP_STATUS	CTZUS, CTZFOR, FNINUS
D23YR	P_ED_2ND_HD_DEGREE_AWARD_YR_3_YR_GROUPING	D2YR
D25YR	P_ED_2ND_HD_DEGREE_AWARD_YR_5_YR_GROUPING	D2YR
D2DGRUS	P_ED_2ND_HD_SCHOOL_REGION_US_NONUS	D2RGN, D2ST
D2RGN	P_ED_2ND_HD_SCHOOL_REGION	D2ST
D33YR	Q_ED_3RD_HD_DEGREE_AWARD_YR_3_YR_GROUPING	D3YR
D35YR	Q_ED_3RD_HD_DEGREE_AWARD_YR_5_YR_GROUPING	D3YR
D3DGRUS	Q_ED_3RD_HD_SCHOOL_REGION_US_NONUS	D3RGN, D3ST
D3RGN	Q_ED_3RD_HD_SCHOOL_REGION	D3ST
D43YR	R_ED_4TH_HD_DEGREE_AWARD_YR_3_YR_GROUPING	D4YR

Recoded Variable	SESTAT Name	Input Variable(s)
D45YR	R_ED_4TH_HD_DEGREE_AWARD_YR_5_YR_GROUPING	D4YR
D4DGRUS	R_ED_4TH_HD_SCHOOL_REGION_US_NONUS	D4RGN, D4ST
D4RGN	R_ED_4TH_HD_SCHOOL_REGION	D4ST
D53YR	S_ED_5TH_HD_DEGREE_AWARD_YR_3_YR_GROUPING	D5YR
D55YR	S_ED_5TH_HD_DEGREE_AWARD_YR_5_YR_GROUPING	D5YR
D5DGRUS	S_ED_5TH_HD_SCHOOL_REGION_US_NONUS	D5RGN, D5ST
D5RGN	S_ED_5TH_HD_SCHOOL_REGION	D5ST
DIFAGEGR	X_DEM_DISABLE_EARLIEST_AGE_5_YR_GROUPING	DIFAGE
EMRG	E_JOB_EMPLR_LOC_REGION	EMST
EMSECDT	E_JOB_EMPLR_SECTOR_CD	EMED, EDTP, NEDTP
EMSECSM	E_JOB_EMPLR_SECTOR_CD_SUMRY	EMED, NEDTP
EMTP	E_JOB_EMPLR_TYPE	EDTP, NEDTP, EMED
EMUS	E_JOB_EMPLR_LOC_REGION_US_NONUS	EMRGN, EMST
FNCRGN	V_DEM_CITIZENSHIP_CNTRY_REGION	FNCCD
HCAPIN	X_DEM_DISABLE_IND	DIFHEAR, DIFSEE, DIFWALK, DIFLIFT, DIFCOGN
HDACY3	O_ED_HD_DEGREE_AWARD_YR_3_YR_GROUPING	DGRYR
HDACYR	O_ED_HD_DEGREE_AWARD_ACADEMIC_YR	DGRYR, HDMN
HDAY5	O_ED_HD_DEGREE_AWARD_YR_5_YR_GROUPING	DGRYR
HDDGRUS	O_ED_HD_SCHOOL_REGION_US_NONUS	HDRGN, HDST
HDRGN	O_ED_HD_SCHOOL_REGION	HDST
HISPANIC	U_DEM_RACE_HISPANIC_ORIGIN_INDICATOR	HISPCAT0
LFSTAT	A_JOB_STATUS_LABOR_FORCE_STAT	WRKG, LOOKWK, NWLAY
MARIND	W_DEM_MARITAL_STAT_MARRIED	MARSTA
MINRTY	U_DEM_RACE_MINORITY_IND	RACEM, HISPCAT
MR3YR	M_ED_MR_DEGREE_AWARD_YR_3_YR_GROUPING	MRYR
MR5YR	M_ED_MR_DEGREE_AWARD_YR_5_YR_GROUPING	MRYR
MRDACYR	M_ED_MR_DEGREE_AWARD_ACADEMIC_YR	MRYR, MRMN
MRDGRUS	M_ED_MR_SCHOOL_REGION_US_NONUS	MRRGN, MRST
MRRGN	M_ED_MR_SCHOOL_REGION	MRST
N2OCBLST	C_JOB_LAST_OCC_GRP_BROAD_NEW2	N3OCLST
N2OCMLST	C_JOB_LAST_OCC_GRP_MAJOR_NEW2	N3OCLST
N2OCNLST	C_JOB_LAST_OCC_GRP_MINOR_NEW2	N3OCLST
N3OCPRBG	B_JOB_OCC_GRP_BROAD_NEW2	N3OCPR
N3OCPRMG	B_JOB_OCC_GRP_MAJOR_NEW2	N3OCPR
N3OCPRNG	B_JOB_OCC_GRP_MINOR_NEW2	N3OCPR
N2ACEDMG	N_ED_REF_WK_ENROLL_ED_CAT_MAJOR_NEW	N2ACED
N2ACEDNG	N_ED_REF_WK_ENROLL_ED_CAT_MINOR_NEW	N2ACED

Recoded Variable	SESTAT Name	Input Variable(s)
NBAMEBG	J_ED_BA_MAJOR_ED_GROUP_BROAD_NEW	N2BAMED
NBAMEMG	J_ED_BA_MAJOR_ED_GROUP_MAJOR_NEW	N2BAMED
NBAMENG	J_ED_BA_MAJOR_ED_GROUP_MINOR_NEW	N2BAMED
NBANENG	J_ED_BA_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW	N2BANED
NBASEMG	J_ED_BA_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW	N2BANED
ND2MEMG	P_ED_2ND_HD_MAJOR_ED_GRP_MAJOR_NEW	N2D2MED
ND2MENG	P_ED_2ND_HD_MAJOR_ED_GRP_MINOR_NEW	N2D2MED
ND2NENG	P_ED_2ND_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW	N2BANED
ND2SEMG	P_ED_2ND_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW	N2BANED
ND3MEMG	Q_ED_3RD_HD_MAJOR_ED_GRP_MAJOR_NEW	N2D3MED
ND3MENG	Q_ED_3RD_HD_MAJOR_ED_GRP_MINOR_NEW	N2D3MED
ND3NENG	Q_ED_3RD_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW	N2BANED
ND3SEMG	Q_ED_3RD_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW	N2BANED
ND4MEMG	R_ED_4TH_HD_MAJOR_ED_GRP_MAJOR_NEW	N2D4MED
ND4MENG	R_ED_4TH_HD_MAJOR_ED_GRP_MINOR_NEW	N2D4MED
ND4NENG	R_ED_4TH_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW	N2BANED
ND4SEMG	R_ED_4TH_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW	N2BANED
ND5MEMG	S_ED_5TH_HD_MAJOR_ED_GRP_MAJOR_NEW	N2D5MED
ND5MENG	S_ED_5TH_HD_MAJOR_ED_GRP_MINOR_NEW	N2D5MED
ND5NENG	S_ED_5TH_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW	N2BANED
ND5SEMG	S_ED_5TH_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW	N2BANED
NDGMEBG	O_ED_HD_MAJOR_ED_GRP_BROAD_NEW	N2DGRMED
NDGMEMG	O_ED_HD_MAJOR_ED_GRP_MAJOR_NEW	N2DGRMED
NDGMENG	O_ED_HD_MAJOR_ED_GRP_MINOR_NEW	N2DGRMED
NHDNENG	O_ED_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW	N2BANED
NHDSEMG	O_ED_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW	N2BANED
NMRMEBG	M_ED_MR_MAJOR_ED_GRP_BROAD_NEW	N2MRMED
NMRMEMG	M_ED_MR_MAJOR_ED_GRP_MAJOR_NEW	N2MRMED
NMRMENG	M_ED_MR_MAJOR_ED_GRP_MINOR_NEW	N2MRMED
NMRNENG	M_ED_MR_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW	N2BANED
NMRSEMG	M_ED_MR_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW	N2BANED
PACIFIC	U_DEM_RACE_PACIFIC	HAWAIIAN, CHAMORRO, SAMOAN, O_PACIFIC
RACEM	U_DEM_MULTIPLE_RACE_CAT	ASIAN, BLACK, NATIVE, PACIFIC, WHITE
RACETHM	U_DEM_MULTIPLE_RACE_ETHNICITY_CAT	ASIAN, BLACK, HISPANIC, NATIVE, PACIFIC, WHITE
RESPLCUS	U_RESPONDENT_LOCATION_US_NONUS	RESPLOC

Recoded Variable	SESTAT Name	Input Variable(s)
RESPLOC	U_RESPONDENT_LOCATION	RESPLO3
WAPRRD	F_JOB_WRK_ACTIVITY_PRIM_RSRCH_DEV_NEWRD	WAPRI
WAPRSM	F_JOB_WRK_ACTIVITY_PRIMRY_SUMRY	WAPRI
WAPRSM2	F_JOB_WRK_ACTIVITY_PRIMRY_SUMRY_NEWRD	WAPRI
WAPRSM3	F_JOB_WRK_ACTIVITY_PRIMRY_SUMRY_NEWRD2	WAPRI
WASCSM	F_JOB_WRK_ACTIVITY_SECONDARY_SUMRY	WASEC
WASCSM2	F_JOB_WRK_ACTIVITY_SECONDARY_SUMRY_NEWRD	WASEC
WASCSM3	F_JOB_WRK_ACTIVITY_SECONDARY_SUMRY_NEWRD2	WASEC
WKSWK	B_PRINCIPAL_JOB_WEEKS	WKSYR, WKSLYR

Appendix B. SAS Code to Generate Recoded Variables in the 2023 NSCG Public-Use Data

```
*****************************************************************;
* PROGRAM:  ecg23_RecodeAlgorithms.sas                          ;
* DATE   :  01APR22                                             ;
* PURPOSE:  To be used as an include file to generate SESTAT recodes;
*****************************************************************;

* Set input and output dataset names here;
%let indata = datasetname;
%let outdata = datasetname;

data &outdata;
  set &indata;

   ** SAS_NAME         : ASIAN
   ** SURVEY           : ecg23
   ** ALGORITHM_NAME   : R_ASIAN
   ** VARIABLE_NAME    : U_DEM_RACE_ASIAN
   ** Input Variables  : ASIND, CHINESE, FILIPINO, JAPANESE, KOREAN, VIETNAMESE, O_ASIAN
   ** Code Name        : MRKALL
   ** Additional Notes: ASIAN must be generated before RACEM, 2023 only
   ** Variable Creation;
   IF ASIND = 'Y' OR CHINESE = 'Y' OR FILIPINO = 'Y' OR JAPANESE = 'Y' OR KOREAN = 'Y'
   OR VIETNAMESE = 'Y' OR O_ASIAN = 'Y' THEN ASIAN = 'Y';
   ELSE IF ASIND = 'N' AND CHINESE = 'N' AND FILIPINO = 'N' AND JAPANESE = 'N' AND KOREAN = 'N'
   AND VIETNAMESE = 'N' AND O_ASIAN = 'N' THEN ASIAN = 'N';

   ** SAS_NAME         : BARGN
   ** SURVEY           : ecg23
   ** ALGORITHM_NAME   : R_BARGN
   ** VARIABLE_NAME    : J_ED_BA_SCHOOL_REGION
   ** Input Variables  : BAST
   ** Code Name        : REGION_CODES
   ** Additional Notes: BARGN must be generated before BADGRUS
   ** Variable Creation;
   IF BAST IN('099') THEN BARGN = '00';
   ELSE IF BAST IN('000') THEN BARGN = 'X';
```

```
ELSE IF BAST IN('009','023','025','033','044','050','085') THEN BARGN = '01';
ELSE IF BAST IN('034','036','042','086') THEN BARGN = '02';
ELSE IF BAST IN('017','018','026','039','055','087') THEN BARGN = '03';
ELSE IF BAST IN('019','020','027','029','031','038','046','088') THEN BARGN = '04';
ELSE IF BAST IN('010','011','012','013','024','037','045','051','054','089') THEN BARGN = '05';
ELSE IF BAST IN('001','021','028','047','090') THEN BARGN = '06';
ELSE IF BAST IN('005','022','040','048','091') THEN BARGN = '07';
ELSE IF BAST IN('004','008','016','030','032','035','049','056','092') THEN BARGN = '08';
ELSE IF BAST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN BARGN = '09';
ELSE IF BAST = '990' THEN BARGN = '99';
ELSE IF BAST = '998' THEN BARGN = 'L';
ELSE IF BAST = '999' THEN BARGN = 'M';
ELSE IF BAST = '997' THEN BARGN = 'X';
ELSE IF '100' LE BAST LE '199' THEN BARGN = '10';
ELSE IF '200' LE BAST LE '299' THEN BARGN = '20';
ELSE IF '300' LE BAST LE '309' THEN BARGN = '30';
ELSE IF '310' LE BAST LE '318' THEN BARGN = '31';
ELSE IF '330' LE BAST LE '359' THEN BARGN = '33';
ELSE IF '375' LE BAST LE '399' THEN BARGN = '37';
ELSE IF '400' LE BAST LE '499' THEN BARGN = '40';
ELSE IF '500' LE BAST LE '529' THEN BARGN = '50';
ELSE IF '550' LE BAST LE '599' THEN BARGN = '55';

** SAS_NAME         : BTHRGN
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_BTHRGN
** VARIABLE_NAME    : U_DEM_BIRTH_PLACE_REGION
** Input Variables : BTHST
** Code Name        : REGION_CODES
** Additional Notes: BTHRGN must be generated before BTHUS
** Variable Creation;
IF BTHST IN('099') THEN BTHRGN = '00';
ELSE IF BTHST IN('000') THEN BTHRGN = 'X';
ELSE IF BTHST IN('009','023','025','033','044','050','085') THEN BTHRGN = '01';
ELSE IF BTHST IN('034','036','042','086') THEN BTHRGN = '02';
ELSE IF BTHST IN('017','018','026','039','055','087') THEN BTHRGN = '03';
ELSE IF BTHST IN('019','020','027','029','031','038','046','088') THEN BTHRGN = '04';
ELSE IF BTHST IN('010','011','012','013','024','037','045','051','054','089') THEN BTHRGN = '05';
ELSE IF BTHST IN('001','021','028','047','090') THEN BTHRGN = '06';
ELSE IF BTHST IN('005','022','040','048','091') THEN BTHRGN = '07';
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ELSE IF BTHST IN('004','008','016','030','032','035','049','056','092') THEN BTHRGN = '08';
ELSE IF BTHST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN BTHRGN = '09';
ELSE IF BTHST = '990' THEN BTHRGN = '99';
ELSE IF BTHST = '998' THEN BTHRGN = 'L';
ELSE IF BTHST = '999' THEN BTHRGN = 'M';
ELSE IF BTHST = '997' THEN BTHRGN = 'X';
ELSE IF '100' LE BTHST LE '199' THEN BTHRGN = '10';
ELSE IF '200' LE BTHST LE '299' THEN BTHRGN = '20';
ELSE IF '300' LE BTHST LE '309' THEN BTHRGN = '30';
ELSE IF '310' LE BTHST LE '318' THEN BTHRGN = '31';
ELSE IF '330' LE BTHST LE '359' THEN BTHRGN = '33';
ELSE IF '375' LE BTHST LE '399' THEN BTHRGN = '37';
ELSE IF '400' LE BTHST LE '499' THEN BTHRGN = '40';
ELSE IF '500' LE BTHST LE '529' THEN BTHRGN = '50';
ELSE IF '550' LE BTHST LE '599' THEN BTHRGN = '55';

** SAS_NAME        : CH6
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_CH6
** VARIABLE_NAME   : W_DEM_CHILDREN_NBR_UNDER_6
** Input Variables : CHU2, CH25
** Code Name       : NUMERIC_TWO
** Additional Notes: ALL SURVEYS 1993-2010 [QUESTIONNAIRE: 2003/ RECODE: ALL OTHER YEARS], CH6 must be
   generated before CH6IN
** Variable Creation;
IF CHU2= 97 AND CH25= 97 THEN CH6=97;
ELSE IF CHU2= 98 AND CH25= 98 THEN CH6=98;
ELSE IF CHU2= 99 AND CH25= 99 THEN CH6=99;
ELSE IF CHU2 NOT IN (97, 98, 99) AND CH25 NOT IN (97, 98, 99) THEN CH6= CHU2 + CH25;

** SAS_NAME        : D2RGN
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D2RGN
** VARIABLE_NAME   : P_ED_2ND_HD_SCHOOL_REGION
** Input Variables : D2ST
** Code Name       : REGION_CODES
** Additional Notes: D2RGN must be generated before D2DGRUS
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
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   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF D2ST IN('099') THEN D2RGN = '00';
ELSE IF D2ST IN('000') THEN D2RGN = 'X';
ELSE IF D2ST IN('009','023','025','033','044','050','085') THEN D2RGN = '01';
ELSE IF D2ST IN('034','036','042','086') THEN D2RGN = '02';
ELSE IF D2ST IN('017','018','026','039','055','087') THEN D2RGN = '03';
ELSE IF D2ST IN('019','020','027','029','031','038','046','088') THEN D2RGN = '04';
ELSE IF D2ST IN('010','011','012','013','024','037','045','051','054','089') THEN D2RGN = '05';
ELSE IF D2ST IN('001','021','028','047','090') THEN D2RGN = '06';
ELSE IF D2ST IN('005','022','040','048','091') THEN D2RGN = '07';
ELSE IF D2ST IN('004','008','016','030','032','035','049','056','092') THEN D2RGN = '08';
ELSE IF D2ST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN D2RGN = '09';
ELSE IF D2ST = '990' THEN D2RGN = '99';
ELSE IF D2ST = '998' THEN D2RGN = 'L';
ELSE IF D2ST = '999' THEN D2RGN = 'M';
ELSE IF D2ST = '997' THEN D2RGN = 'X';
ELSE IF '100' LE D2ST LE '199' THEN D2RGN = '10';
ELSE IF '200' LE D2ST LE '299' THEN D2RGN = '20';
ELSE IF '300' LE D2ST LE '309' THEN D2RGN = '30';
ELSE IF '310' LE D2ST LE '318' THEN D2RGN = '31';
ELSE IF '330' LE D2ST LE '359' THEN D2RGN = '33';
ELSE IF '375' LE D2ST LE '399' THEN D2RGN = '37';
ELSE IF '400' LE D2ST LE '499' THEN D2RGN = '40';
ELSE IF '500' LE D2ST LE '529' THEN D2RGN = '50';
ELSE IF '550' LE D2ST LE '599' THEN D2RGN = '55';

** SAS_NAME        : D3RGN
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D3RGN
** VARIABLE_NAME   : Q_ED_3RD_HD_SCHOOL_REGION
** Input Variables : D3ST
** Code Name       : REGION_CODES
** Additional Notes: D3RGN must be generated before D3DGRUS
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF D3ST IN('099') THEN D3RGN = '00';
```

```
ELSE IF D3ST IN('000') THEN D3RGN = 'X';
ELSE IF D3ST IN('009','023','025','033','044','050','085') THEN D3RGN = '01';
ELSE IF D3ST IN('034','036','042','086') THEN D3RGN = '02';
ELSE IF D3ST IN('017','018','026','039','055','087') THEN D3RGN = '03';
ELSE IF D3ST IN('019','020','027','029','031','038','046','088') THEN D3RGN = '04';
ELSE IF D3ST IN('010','011','012','013','024','037','045','051','054','089') THEN D3RGN = '05';
ELSE IF D3ST IN('001','021','028','047','090') THEN D3RGN = '06';
ELSE IF D3ST IN('005','022','040','048','091') THEN D3RGN = '07';
ELSE IF D3ST IN('004','008','016','030','032','035','049','056','092') THEN D3RGN = '08';
ELSE IF D3ST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN D3RGN = '09';
ELSE IF D3ST = '990' THEN D3RGN = '99';
ELSE IF D3ST = '998' THEN D3RGN = 'L';
ELSE IF D3ST = '999' THEN D3RGN = 'M';
ELSE IF D3ST = '997' THEN D3RGN = 'X';
ELSE IF '100' LE D3ST LE '199' THEN D3RGN = '10';
ELSE IF '200' LE D3ST LE '299' THEN D3RGN = '20';
ELSE IF '300' LE D3ST LE '309' THEN D3RGN = '30';
ELSE IF '310' LE D3ST LE '318' THEN D3RGN = '31';
ELSE IF '330' LE D3ST LE '359' THEN D3RGN = '33';
ELSE IF '375' LE D3ST LE '399' THEN D3RGN = '37';
ELSE IF '400' LE D3ST LE '499' THEN D3RGN = '40';
ELSE IF '500' LE D3ST LE '529' THEN D3RGN = '50';
ELSE IF '550' LE D3ST LE '599' THEN D3RGN = '55';

** SAS_NAME        : D4RGN
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D4RGN
** VARIABLE_NAME   : R_ED_4TH_HD_SCHOOL_REGION
** Input Variables : D4ST
** Code Name       : REGION_CODES
** Additional Notes: D4RGN must be generated before D4DGRUS
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF D4ST IN('099') THEN D4RGN = '00';
ELSE IF D4ST IN('000') THEN D4RGN = 'X';
ELSE IF D4ST IN('009','023','025','033','044','050','085') THEN D4RGN = '01';
ELSE IF D4ST IN('034','036','042','086') THEN D4RGN = '02';
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ELSE IF D4ST IN('017','018','026','039','055','087') THEN D4RGN = '03';
ELSE IF D4ST IN('019','020','027','029','031','038','046','088') THEN D4RGN = '04';
ELSE IF D4ST IN('010','011','012','013','024','037','045','051','054','089') THEN D4RGN = '05';
ELSE IF D4ST IN('001','021','028','047','090') THEN D4RGN = '06';
ELSE IF D4ST IN('005','022','040','048','091') THEN D4RGN = '07';
ELSE IF D4ST IN('004','008','016','030','032','035','049','056','092') THEN D4RGN = '08';
ELSE IF D4ST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN D4RGN = '09';
ELSE IF D4ST = '990' THEN D4RGN = '99';
ELSE IF D4ST = '998' THEN D4RGN = 'L';
ELSE IF D4ST = '999' THEN D4RGN = 'M';
ELSE IF D4ST = '997' THEN D4RGN = 'X';
ELSE IF '100' LE D4ST LE '199' THEN D4RGN = '10';
ELSE IF '200' LE D4ST LE '299' THEN D4RGN = '20';
ELSE IF '300' LE D4ST LE '309' THEN D4RGN = '30';
ELSE IF '310' LE D4ST LE '318' THEN D4RGN = '31';
ELSE IF '330' LE D4ST LE '359' THEN D4RGN = '33';
ELSE IF '375' LE D4ST LE '399' THEN D4RGN = '37';
ELSE IF '400' LE D4ST LE '499' THEN D4RGN = '40';
ELSE IF '500' LE D4ST LE '529' THEN D4RGN = '50';
ELSE IF '550' LE D4ST LE '599' THEN D4RGN = '55';

** SAS_NAME        : D5RGN
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D5RGN
** VARIABLE_NAME   : S_ED_5TH_HD_SCHOOL_REGION
** Input Variables : D5ST
** Code Name       : REGION_CODES
** Additional Notes: D5RGN must be generated before D5DGRUS
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF D5ST IN('099') THEN D5RGN = '00';
ELSE IF D5ST IN('000') THEN D5RGN = 'X';
ELSE IF D5ST IN('009','023','025','033','044','050','085') THEN D5RGN = '01';
ELSE IF D5ST IN('034','036','042','086') THEN D5RGN = '02';
ELSE IF D5ST IN('017','018','026','039','055','087') THEN D5RGN = '03';
ELSE IF D5ST IN('019','020','027','029','031','038','046','088') THEN D5RGN = '04';
ELSE IF D5ST IN('010','011','012','013','024','037','045','051','054','089') THEN D5RGN = '05';
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ELSE IF D5ST IN('001','021','028','047','090') THEN D5RGN = '06';
ELSE IF D5ST IN('005','022','040','048','091') THEN D5RGN = '07';
ELSE IF D5ST IN('004','008','016','030','032','035','049','056','092') THEN D5RGN = '08';
ELSE IF D5ST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN D5RGN = '09';
ELSE IF D5ST = '990' THEN D5RGN = '99';
ELSE IF D5ST = '998' THEN D5RGN = 'L';
ELSE IF D5ST = '999' THEN D5RGN = 'M';
ELSE IF D5ST = '997' THEN D5RGN = 'X';
ELSE IF '100' LE D5ST LE '199' THEN D5RGN = '10';
ELSE IF '200' LE D5ST LE '299' THEN D5RGN = '20';
ELSE IF '300' LE D5ST LE '309' THEN D5RGN = '30';
ELSE IF '310' LE D5ST LE '318' THEN D5RGN = '31';
ELSE IF '330' LE D5ST LE '359' THEN D5RGN = '33';
ELSE IF '375' LE D5ST LE '399' THEN D5RGN = '37';
ELSE IF '400' LE D5ST LE '499' THEN D5RGN = '40';
ELSE IF '500' LE D5ST LE '529' THEN D5RGN = '50';
ELSE IF '550' LE D5ST LE '599' THEN D5RGN = '55';

** SAS_NAME        : EMRG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_EMRG
** VARIABLE_NAME   : E_JOB_EMPLR_LOC_REGION
** Input Variables : EMST
** Code Name       : REGION_CODES
** Additional Notes: EMRG must be generated before EMUS
** Variable Creation;
IF EMST IN('099') THEN EMRG = '00';
ELSE IF EMST IN('000') THEN EMRG = 'X';
ELSE IF EMST IN('009','023','025','033','044','050','085') THEN EMRG = '01';
ELSE IF EMST IN('034','036','042','086') THEN EMRG = '02';
ELSE IF EMST IN('017','018','026','039','055','087') THEN EMRG = '03';
ELSE IF EMST IN('019','020','027','029','031','038','046','088') THEN EMRG = '04';
ELSE IF EMST IN('010','011','012','013','024','037','045','051','054','089') THEN EMRG = '05';
ELSE IF EMST IN('001','021','028','047','090') THEN EMRG = '06';
ELSE IF EMST IN('005','022','040','048','091') THEN EMRG = '07';
ELSE IF EMST IN('004','008','016','030','032','035','049','056','092') THEN EMRG = '08';
ELSE IF EMST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN EMRG = '09';
ELSE IF EMST = '990' THEN EMRG = '99';
ELSE IF EMST = '998' THEN EMRG = 'L';
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ELSE IF EMST = '999' THEN EMRG = 'M';
ELSE IF EMST = '997' THEN EMRG = 'X';
ELSE IF '100' LE EMST LE '199' THEN EMRG = '10';
ELSE IF '200' LE EMST LE '299' THEN EMRG = '20';
ELSE IF '300' LE EMST LE '309' THEN EMRG = '30';
ELSE IF '310' LE EMST LE '318' THEN EMRG = '31';
ELSE IF '330' LE EMST LE '359' THEN EMRG = '33';
ELSE IF '375' LE EMST LE '399' THEN EMRG = '37';
ELSE IF '400' LE EMST LE '499' THEN EMRG = '40';
ELSE IF '500' LE EMST LE '529' THEN EMRG = '50';
ELSE IF '550' LE EMST LE '599' THEN EMRG = '55';

** SAS_NAME        : EMSECDT
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_EMSECDT
** VARIABLE_NAME   : E_JOB_EMPLR_SECTOR_CD
** Input Variables : EMED, EDTP, NEDTP
** Code Name       : EMP_SECTOR_DET_CODES
** Additional Notes: ALL SURVEYS 1993-2023, EMSECDT must be generated before EMSECPB
** Variable Creation;
IF EMED= 'Y' AND EDTP IN ('3', '4', '5') THEN EMSECDT= '11';
ELSE IF EMED= 'Y' AND EDTP IN ('1', '2', '6') THEN EMSECDT= '12';
ELSE IF EMED= 'N' AND NEDTP IN ('2', '3', '9') THEN EMSECDT='21';
ELSE IF EMED= 'N' AND NEDTP= '1' THEN EMSECDT= '22';
ELSE IF EMED= 'N' AND NEDTP= '4' THEN EMSECDT= '23';
ELSE IF EMED= 'N' AND NEDTP IN ('7','8') THEN EMSECDT= '31';
ELSE IF EMED= 'N' AND NEDTP IN ('5', '6') THEN EMSECDT= '32';
ELSE IF EMED= 'N' AND NEDTP IN ('10') THEN EMSECDT= '33';
ELSE IF EMED= 'L' THEN EMSECDT= 'L';
ELSE IF EMED= 'M' THEN EMSECDT= 'M';
ELSE IF EMED= 'X' THEN EMSECDT= 'X';

** SAS_NAME        : HDRGN
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_HDRGN
** VARIABLE_NAME   : O_ED_HD_SCHOOL_REGION
** Input Variables : HDST
** Code Name       : REGION_CODES
** Additional Notes: HDRGN must be generated before HDDGRUS
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
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   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF HDST IN('099') THEN HDRGN = '00';
ELSE IF HDST IN('000') THEN HDRGN = 'X';
ELSE IF HDST IN('009','023','025','033','044','050','085') THEN HDRGN = '01';
ELSE IF HDST IN('034','036','042','086') THEN HDRGN = '02';
ELSE IF HDST IN('017','018','026','039','055','087') THEN HDRGN = '03';
ELSE IF HDST IN('019','020','027','029','031','038','046','088') THEN HDRGN = '04';
ELSE IF HDST IN('010','011','012','013','024','037','045','051','054','089') THEN HDRGN = '05';
ELSE IF HDST IN('001','021','028','047','090') THEN HDRGN = '06';
ELSE IF HDST IN('005','022','040','048','091') THEN HDRGN = '07';
ELSE IF HDST IN('004','008','016','030','032','035','049','056','092') THEN HDRGN = '08';
ELSE IF HDST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN HDRGN = '09';
ELSE IF HDST = '990' THEN HDRGN = '99';
ELSE IF HDST = '998' THEN HDRGN = 'L';
ELSE IF HDST = '999' THEN HDRGN = 'M';
ELSE IF HDST = '997' THEN HDRGN = 'X';
ELSE IF '100' LE HDST LE '199' THEN HDRGN = '10';
ELSE IF '200' LE HDST LE '299' THEN HDRGN = '20';
ELSE IF '300' LE HDST LE '309' THEN HDRGN = '30';
ELSE IF '310' LE HDST LE '318' THEN HDRGN = '31';
ELSE IF '330' LE HDST LE '359' THEN HDRGN = '33';
ELSE IF '375' LE HDST LE '399' THEN HDRGN = '37';
ELSE IF '400' LE HDST LE '499' THEN HDRGN = '40';
ELSE IF '500' LE HDST LE '529' THEN HDRGN = '50';
ELSE IF '550' LE HDST LE '599' THEN HDRGN = '55';

** SAS_NAME        : HISPANIC
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_HISPANIC
** VARIABLE_NAME   : U_DEM_RACE_HISPANIC_ORIGIN_INDICATOR
** Input Variables : HISPCAT0
** Code Name       : YES_NO_CODES
** Additional Notes:
** Variable Creation;
IF HISPCAT0 = 'Y' THEN HISPANIC = 'N';
IF HISPCAT0 = 'N' THEN HISPANIC = 'Y';
IF HISPCAT0 IN ('L', 'M', 'X') THEN HISPANIC = HISPCAT0;
```

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** SAS_NAME         : MRRGN
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_MRRGN
** VARIABLE_NAME    : M_ED_MR_SCHOOL_REGION
** Input Variables : MRST
** Code Name        : REGION_CODES
** Additional Notes: MRRGN must be generated before MRDGRUS
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF MRST IN('099') THEN MRRGN = '00';
ELSE IF MRST IN('000') THEN MRRGN = 'X';
ELSE IF MRST IN('009','023','025','033','044','050','085') THEN MRRGN = '01';
ELSE IF MRST IN('034','036','042','086') THEN MRRGN = '02';
ELSE IF MRST IN('017','018','026','039','055','087') THEN MRRGN = '03';
ELSE IF MRST IN('019','020','027','029','031','038','046','088') THEN MRRGN = '04';
ELSE IF MRST IN('010','011','012','013','024','037','045','051','054','089') THEN MRRGN = '05';
ELSE IF MRST IN('001','021','028','047','090') THEN MRRGN = '06';
ELSE IF MRST IN('005','022','040','048','091') THEN MRRGN = '07';
ELSE IF MRST IN('004','008','016','030','032','035','049','056','092') THEN MRRGN = '08';
ELSE IF MRST IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN MRRGN = '09';
ELSE IF MRST = '990' THEN MRRGN = '99';
ELSE IF MRST = '998' THEN MRRGN = 'L';
ELSE IF MRST = '999' THEN MRRGN = 'M';
ELSE IF MRST = '997' THEN MRRGN = 'X';
ELSE IF '100' LE MRST LE '199' THEN MRRGN = '10';
ELSE IF '200' LE MRST LE '299' THEN MRRGN = '20';
ELSE IF '300' LE MRST LE '309' THEN MRRGN = '30';
ELSE IF '310' LE MRST LE '318' THEN MRRGN = '31';
ELSE IF '330' LE MRST LE '359' THEN MRRGN = '33';
ELSE IF '375' LE MRST LE '399' THEN MRRGN = '37';
ELSE IF '400' LE MRST LE '499' THEN MRRGN = '40';
ELSE IF '500' LE MRST LE '529' THEN MRRGN = '50';
ELSE IF '550' LE MRST LE '599' THEN MRRGN = '55';

** SAS_NAME         : RACEM
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_RACEM
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** VARIABLE_NAME   : U_DEM_MULTIPLE_RACE_CAT
** Input Variables : ASIAN, BLACK, NATIVE, PACIFIC, WHITE
** Code Name       : MRKALL
** Additional Notes: ALL SURVEYS 2003-2023, RACEM must be generated before MINRTY
** Variable Creation;
RACEM= '6';
IF ASIAN= 'Y' AND BLACK ^= 'Y' AND NATIVE ^= 'Y' AND WHITE ^= 'Y' AND PACIFIC ^= 'Y' THEN RACEM= '1';
IF NATIVE= 'Y' AND BLACK ^= 'Y' AND ASIAN ^= 'Y' AND WHITE ^= 'Y' AND PACIFIC ^= 'Y' THEN RACEM= '2';
IF BLACK= 'Y' AND NATIVE ^= 'Y' AND ASIAN ^= 'Y' AND WHITE ^= 'Y' AND  PACIFIC ^= 'Y' THEN RACEM= '3';
IF WHITE = 'Y' AND BLACK ^= 'Y' AND NATIVE ^= 'Y' AND ASIAN ^= 'Y' AND PACIFIC ^= 'Y' THEN RACEM= '4';
IF PACIFIC= 'Y' AND BLACK ^= 'Y' AND NATIVE ^= 'Y' AND ASIAN ^= 'Y' AND WHITE ^= 'Y' THEN RACEM= '5';

** SAS_NAME        : RACETHM
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_RACETHM
** VARIABLE_NAME   : U_DEM_MULTIPLE_RACE_ETHNICITY_CAT
** Input Variables : ASIAN, BLACK, HISPANIC, NATIVE, PACIFIC, WHITE
** Code Name       : ETHNICITY_CODES_NEW
** Additional Notes: ALL SURVEYS 2003-2023, RACETHM must be generated before RACETHMP
** Variable Creation;
IF HISPANIC = 'Y' THEN RACETHM= '4';
ELSE IF HISPANIC= 'N' THEN RACETHM= '7';
ELSE IF ASIAN = 'Y' AND BLACK ^= 'Y' AND NATIVE ^=  'Y' AND WHITE ^=  'Y' AND PACIFIC ^=  'Y' AND
HISPANIC ^=  'Y' THEN RACETHM= '1';
ELSE IF NATIVE= 'Y' AND BLACK ^= 'Y' AND ASIAN ^= 'Y' AND WHITE ^= 'Y' AND PACIFIC ^= 'Y' AND HISPANIC
^=  'Y' THEN RACETHM= '2';
ELSE IF BLACK= 'Y' AND NATIVE ^= 'Y' AND ASIAN ^= 'Y' AND WHITE ^= 'Y' AND  PACIFIC ^= 'Y' AND HISPANIC
^=  'Y' THEN RACETHM= '3';
ELSE IF WHITE = 'Y' AND BLACK ^= 'Y' AND NATIVE ^= 'Y' AND ASIAN ^= 'Y' AND PACIFIC ^= 'Y' AND HISPANIC
^=  'Y' THEN RACETHM= '5';
ELSE IF PACIFIC= 'Y' AND BLACK ^= 'Y' AND NATIVE ^= 'Y' AND ASIAN ^= 'Y' AND WHITE ^= 'Y' AND HISPANIC
^=  'Y' THEN RACETHM= '6';

** SAS_NAME        : RESPLOC
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_RESPLOC
** VARIABLE_NAME   : U_RESPONDENT_LOCATION
** Input Variables : RESPLO3
** Code Name       : REGION_CODES
** Additional Notes: RESPLOC must be generated before RESPLCUS
** Variable Creation;
```

```
IF RESPLCUS IN('099') THEN RESPLOC = '00';
ELSE IF RESPLO3 IN('000') THEN RESPLOC = 'X';
ELSE IF RESPLO3 IN('009','023','025','033','044','050','085') THEN RESPLOC = '01';
ELSE IF RESPLO3 IN('034','036','042','086') THEN RESPLOC = '02';
ELSE IF RESPLO3 IN('017','018','026','039','055','087') THEN RESPLOC = '03';
ELSE IF RESPLO3 IN('019','020','027','029','031','038','046','088') THEN RESPLOC = '04';
ELSE IF RESPLO3 IN('010','011','012','013','024','037','045','051','054','089') THEN RESPLOC = '05';
ELSE IF RESPLO3 IN('001','021','028','047','090') THEN RESPLOC = '06';
ELSE IF RESPLO3 IN('005','022','040','048','091') THEN RESPLOC = '07';
ELSE IF RESPLO3 IN('004','008','016','030','032','035','049','056','092') THEN RESPLOC = '08';
ELSE IF RESPLO3 IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN RESPLOC = '09';
ELSE IF RESPLO3 = '990' THEN RESPLOC = '99';
ELSE IF RESPLO3 = '998' THEN RESPLOC = 'L';
ELSE IF RESPLO3 = '999' THEN RESPLOC = 'M';
ELSE IF RESPLO3 = '997' THEN RESPLOC = 'X';
ELSE IF '100' LE RESPLO3 LE '199' THEN RESPLOC = '10';
ELSE IF '200' LE RESPLO3 LE '299' THEN RESPLOC = '20';
ELSE IF '300' LE RESPLO3 LE '309' THEN RESPLOC = '30';
ELSE IF '310' LE RESPLO3 LE '318' THEN RESPLOC = '31';
ELSE IF '330' LE RESPLO3 LE '359' THEN RESPLOC = '33';
ELSE IF '375' LE RESPLO3 LE '399' THEN RESPLOC = '37';
ELSE IF '400' LE RESPLO3 LE '499' THEN RESPLOC = '40';
ELSE IF '500' LE RESPLO3 LE '529' THEN RESPLOC = '50';
ELSE IF '550' LE RESPLO3 LE '599' THEN RESPLOC = '55';

** SAS_NAME        : WKSWK
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_WKSWK
** VARIABLE_NAME   : B_PRINCIPAL_JOB_WEEKS
** Input Variables : WKSYR, WKSLYR
** Code Name       : NUMERIC_TWO
** Additional Notes: ALL SURVEYS 1995-2023, WKSWK must be generated before WKSWKP
** Variable Creation;
IF WKSYR = '1' THEN WKSWK=52;
IF WKSYR='2' THEN WKSWK = WKSLYR;
IF WKSYR = 'X' THEN WKSWK = 97;
IF WKSYR = 'L' THEN WKSWK = 98;
IF WKSYR = 'M' THEN WKSWK = 99;

** SAS_NAME        : ACTCAP
```

```
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ACTCAP03
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIM_SEC_COMPUTER
** Input Variables : WAPRI, WASEC
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 2003-2023
** Variable Creation;
IF WAPRI= '06' OR WASEC= '06' THEN ACTCAP= 'Y';
IF WAPRI ^= '06' AND WASEC ^= '06' THEN ACTCAP= 'N';
IF WAPRI IN ('L', 'M', 'X') THEN ACTCAP= WAPRI;

** SAS_NAME        : ACTDED
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ACTDED03
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIM_SEC_DEV_DESIGN
** Input Variables : WAPRI, WASEC
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 2003-2023
** Variable Creation;
IF WAPRI IN ('04','05') OR WASEC IN ('04','05') THEN ACTDED= 'Y';
IF WAPRI NOT IN ('04','05') AND WASEC NOT IN ('04','05') THEN ACTDED= 'N';
IF WAPRI IN ('L', 'M', 'X') THEN ACTDED= WAPRI;

** SAS_NAME        : ACTMGT
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ACTMGT
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIM_SEC_MGT_SALES
** Input Variables : WAPRI, WASEC
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 1993-2023
** Variable Creation;
IF WAPRI IN ('01','07','08','11','12') OR WASEC IN ('01','07','08','11','12') THEN ACTMGT= 'Y';
IF WAPRI NOT IN ('01','07','08','11','12') AND WASEC NOT IN ('01','07','08','11','12')  THEN ACTMGT=
'N';
IF WAPRI IN ('L','M', 'X') THEN ACTMGT= WAPRI;

** SAS_NAME        : ACTRD
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ACTRD03
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIM_SEC_RSRCH_DEV
** Input Variables : WAPRI, WASEC
```

```
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 2003-2023
** Variable Creation;
IF WAPRI IN ('02', '03','04', '05') OR WASEC IN  ('02', '03','04', '05') THEN ACTRD= 'Y';
IF WAPRI NOT IN ('02', '03','04', '05') AND WASEC NOT IN  ('02', '03','04', '05') THEN ACTRD= 'N';
IF WAPRI IN ('L', 'M','X') THEN ACTRD= WAPRI;

** SAS_NAME        : ACTRDT
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ACTRDT03
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIM_SEC_RSRCH_DEV_TEACH
** Input Variables : WAPRI, WASEC
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 2003-2023
** Variable Creation;
IF WAPRI IN ('02', '03','04', '05','13') OR WASEC IN  ('02', '03','04', '05','13') THEN ACTRDT= 'Y';
IF WAPRI NOT IN ('02', '03','04', '05','13') AND WASEC NOT IN  ('02', '03','04', '05','13') THEN ACTRDT=
'N';
IF WAPRI IN ('L', 'M','X') THEN ACTRDT= WAPRI;

** SAS_NAME        : ACTRES
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ACTRES
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIM_SEC_RSRCH
** Input Variables : WAPRI, WASEC
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 1993-2023
** Variable Creation;
IF WAPRI IN ('02','03') OR WASEC IN ('02','03') THEN ACTRES= 'Y';
IF WAPRI NOT IN ('02','03') AND WASEC NOT IN ('02','03') THEN ACTRES= 'N';
IF WAPRI IN ('L', 'M','X') THEN ACTRES= WAPRI;

** SAS_NAME        : ACTTCH
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ACTTCH
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIM_SEC_TEACH
** Input Variables : WAPRI, WASEC
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 1993-2023
** Variable Creation;
IF (WAPRI= '13' OR WASEC= '13') THEN ACTTCH= 'Y';
```

```
IF WAPRI NE '13' AND WASEC NE '13' THEN ACTTCH = 'N';
IF WAPRI IN ('L','M', 'X') THEN ACTTCH = WAPRI;

** SAS_NAME         : AGEGR
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_AGEGR
** VARIABLE_NAME    : U_DEM_AGE_GROUP_5_YR_GROUPING
** Input Variables  : AGE
** Code Name        : AGE_GROUP_CODES
** Additional Notes: ALL SURVEYS AND YEARS
** Variable Creation;
IF AGE <= 24 THEN AGEGR= 20;
IF 25 <= AGE <= 29 THEN AGEGR= 25;
IF 30 <= AGE <= 34 THEN AGEGR= 30;
IF 35 <= AGE <= 39 THEN AGEGR= 35;
IF 40 <= AGE <= 44 THEN AGEGR= 40;
IF 45 <= AGE <= 49 THEN AGEGR= 45;
IF 50 <= AGE <= 54 THEN AGEGR=50;
IF 55 <= AGE <= 59 THEN AGEGR= 55;
IF 60 <= AGE <= 64 THEN AGEGR= 60;
IF 65 <= AGE <= 69 THEN AGEGR= 65;
IF AGE >= 70 THEN AGEGR= 70;
IF AGE= 98 THEN AGEGR= 98;

** SAS_NAME         : BAAYR3
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_BAAYR3
** VARIABLE_NAME    : J_ED_BA_DEGREE_AWARD_YR_3_YR_GROUPING
** Input Variables  : BAYR
** Code Name        : THREE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF BAYR IN (9997,9998,9999) THEN BAAYR3 = BAYR;
ELSE BAAYR3 = 3 * INT(BAYR / 3);

** SAS_NAME         : BAAYR5
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_BAAYR5
** VARIABLE_NAME    : J_ED_BA_DEGREE_AWARD_YR_5_YR_GROUPING
** Input Variables  : BAYR
** Code Name        : FIVE_YEAR_GROUP_CODES
```

```
** Additional Notes:
** Variable Creation;
IF BAYR IN (9997,9998,9999) THEN BAAYR5 = BAYR;
ELSE BAAYR5 = 5 * INT(BAYR / 5);

** SAS_NAME        : BADGRUS
** SURVEY           : ecg23
** ALGORITHM_NAME  : R_BADGRUS
** VARIABLE_NAME   : J_ED_BA_SCHOOL_REGION_US_NONUS
** Input Variables : BARGN, BAST
** Code Name       : US_NONUS_CODES
** Additional Notes:
** Variable Creation;
IF '00' LE BARGN LE '09' THEN BADGRUS = 'Y';
ELSE IF BAST = '099' THEN BADGRUS = 'Y';
ELSE IF BARGN = 'L' THEN BADGRUS = 'L';
ELSE IF BARGN = 'M' THEN BADGRUS = 'M';
ELSE IF BARGN IN ('X','XX') THEN BADGRUS = 'X';
ELSE BADGRUS = 'N';

** SAS_NAME        : BTHUS
** SURVEY           : ecg23
** ALGORITHM_NAME  : R_BTHUS
** VARIABLE_NAME   : U_DEM_BIRTH_PLACE_REGION_US_NONUS
** Input Variables : BTHRGN, BTHST
** Code Name       : US_NONUS_CODES
** Additional Notes:
** Variable Creation;
IF '00' LE BTHRGN LE '09' THEN BTHUS = 'Y';
ELSE IF BTHRGN = 'L' THEN BTHUS = 'L';
ELSE IF BTHRGN = 'M' THEN BTHUS = 'M';
ELSE IF BTHRGN IN ('X','XX') THEN BTHUS = 'X';
ELSE BTHUS = 'N';

** SAS_NAME        : CH1218IN
** SURVEY           : ecg23
** ALGORITHM_NAME  : R_CH1218IN
** VARIABLE_NAME   : W_DEM_CHILDREN_IND_12_18
** Input Variables : CH1218
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 2003-2023
```

```
** Variable Creation;
IF CH1218= 97 THEN CH1218IN= 'X';
ELSE IF CH1218= 98 THEN CH1218IN= 'L';
ELSE IF CH1218= 99 THEN CH1218IN= 'M';
ELSE IF CH1218 > 0 THEN CH1218IN= 'Y';
ELSE IF CH1218= 0 THEN CH1218IN= 'N';

** SAS_NAME         : CH19IN
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_CH19IN
** VARIABLE_NAME    : W_DEM_CHILDREN_IND_19
** Input Variables  : CH19
** Code Name        : YES_NO_CODES
** Additional Notes: ALL SURVEYS 2003-2023
** Variable Creation;
IF CH19= 97 THEN CH19IN= 'X';
ELSE IF CH19= 98 THEN CH19IN= 'L';
ELSE IF CH19= 99 THEN CH19IN= 'M';
ELSE IF CH19 > 0 THEN CH19IN= 'Y';
ELSE IF CH19= 0 THEN CH19IN= 'N';

** SAS_NAME         : CH25IN
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_CH25IN
** VARIABLE_NAME    : W_DEM_CHILDREN_IND_2_5
** Input Variables  : CH25
** Code Name        : YES_NO_CODES
** Additional Notes: ALL SURVEYS 1995-2023
** Variable Creation;
IF CH25= 97 THEN CH25IN= 'X';
ELSE IF CH25= 98 THEN CH25IN= 'L';
ELSE IF CH25= 99 THEN CH25IN= 'M';
ELSE IF CH25 > 0 THEN CH25IN= 'Y';
ELSE IF CH25= 0 THEN CH25IN= 'N';

** SAS_NAME         : CH611IN
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_CH611IN
** VARIABLE_NAME    : W_DEM_CHILDREN_IND_6_11
** Input Variables  : CH611
** Code Name        : YES_NO_CODES
```

```
** Additional Notes: ALL SURVEYS 1995-2023
** Variable Creation;
IF CH611= 97 THEN CH611IN= 'X';
ELSE IF CH611= 98 THEN CH611IN= 'L';
ELSE IF CH611= 99 THEN CH611IN= 'M';
ELSE IF CH611 > 0 THEN CH611IN= 'Y';
ELSE IF CH611= 0 THEN CH611IN= 'N';

** SAS_NAME         : CH6IN
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_CH6IN
** VARIABLE_NAME    : W_DEM_CHILDREN_IND_UNDER_6
** Input Variables  : CH6
** Code Name        : YES_NO_CODES
** Additional Notes: ALL SURVEYS 1995-2023
** Variable Creation;
IF CH6= 97 THEN CH6IN= 'X';
ELSE IF CH6= 98 THEN CH6IN= 'L';
ELSE IF CH6= 99 THEN CH6IN= 'M';
ELSE IF CH6 > 0 THEN CH6IN= 'Y';
ELSE IF CH6= 0 THEN CH6IN= 'N';

** SAS_NAME         : CHU2IN
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_CHU2IN
** VARIABLE_NAME    : W_DEM_CHILDREN_IND_UNDER_2
** Input Variables  : CHU2
** Code Name        : YES_NO_CODES
** Additional Notes: ALL SURVEYS 1995-2023
** Variable Creation;
IF CHU2= 97 THEN CHU2IN= 'X';
ELSE IF CHU2= 98 THEN CHU2IN= 'L';
ELSE IF CHU2= 99 THEN CHU2IN= 'M';
ELSE IF CHU2 > 0 THEN CHU2IN= 'Y';
ELSE IF CHU2= 0 THEN CHU2IN= 'N';

** SAS_NAME         : CHUN12
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_CHUN12
** VARIABLE_NAME    : W_DEM_CHILDREN_UNDER_12_IND
** Input Variables  : CHU2, CH25, CH611
```

```
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS 1995-2023
** Variable Creation;
IF CHU2=97 AND CH25=97 AND CH611=97 THEN CHUN12 = 'X';
ELSE IF CHU2=98 AND CH25=98 AND CH611=98 THEN CHUN12 = 'L';
ELSE IF CHU2=99 AND CH25=99 AND CH611=99 THEN CHUN12 = 'M';
ELSE IF (CHU2 + CH25 + CH611) = 0 THEN CHUN12= 'N';
ELSE IF (CHU2 + CH25 + CH611) > 0 THEN CHUN12= 'Y';

** SAS_NAME        : CTZN
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_CTZN
** VARIABLE_NAME   : V_DEM_CITIZENSHIP_STATUS
** Input Variables : CTZUS, CTZFOR
** Code Name       : CITIZENSHIP_CODES
** Additional Notes: ALL SURVEYS 1993-2023 [QUESTIONNAIRE: 1993-2001/ RECODE: 2003-2023]
** Variable Creation;
IF CTZUSIN= 'L' AND CTZUS='L' AND CTZFOR='L' THEN CTZN= 'L';
IF CTZUSIN= 'M' AND CTZUS='M' AND CTZFOR='M' THEN CTZN= 'M';
IF CTZUSIN= 'X' AND CTZUS='X' AND CTZFOR='X' THEN CTZN= 'X';
IF CTZUSIN= 'Y' AND CTZUS IN ('1', '2') AND CTZFOR='L' THEN CTZN= '1';
IF CTZUSIN= 'Y' AND CTZUS= '3' AND CTZFOR = 'L' THEN CTZN= '2';
IF CTZUSIN= 'N' AND CTZUS='L' AND CTZFOR= '1' THEN CTZN= '3';
IF CTZUSIN= 'N' AND CTZUS='L' AND CTZFOR= '2' THEN CTZN= '4';

** SAS_NAME        : D23YR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D23YR
** VARIABLE_NAME   : P_ED_2ND_HD_DEGREE_AWARD_YR_3_YR_GROUPING
** Input Variables : D2YR
** Code Name       : THREE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF D2YR IN (9997,9998,9999) THEN D23YR = D2YR;
ELSE D23YR = 3 * INT(D2YR / 3);

** SAS_NAME        : D25YR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D25YR
** VARIABLE_NAME   : P_ED_2ND_HD_DEGREE_AWARD_YR_5_YR_GROUPING
** Input Variables : D2YR
```

```
** Code Name       : FIVE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF D2YR IN (9997,9998,9999) THEN D25YR = D2YR;
ELSE D25YR = 5 * INT(D2YR / 5);

** SAS_NAME        : D2DGRUS
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D2DGRUS
** VARIABLE_NAME   : P_ED_2ND_HD_SCHOOL_REGION_US_NONUS
** Input Variables : D2RGN, D2ST
** Code Name       : US_NONUS_CODES
** Additional Notes:
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF '00' LE D2RGN LE '09' THEN D2DGRUS = 'Y';
ELSE IF D2RGN = 'L' THEN D2DGRUS = 'L';
ELSE IF D2ST = '099' THEN D2DGRUS = 'Y';
ELSE IF D2RGN = 'M' THEN D2DGRUS = 'M';
ELSE IF D2RGN IN ('X','XX') THEN D2DGRUS = 'X';
ELSE D2DGRUS = 'N';

** SAS_NAME        : D33YR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D33YR
** VARIABLE_NAME   : Q_ED_3RD_HD_DEGREE_AWARD_YR_3_YR_GROUPING
** Input Variables : D3YR
** Code Name       : THREE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF D3YR IN (9997,9998,9999) THEN D33YR = D3YR;
ELSE D33YR = 3 * INT(D3YR / 3);

** SAS_NAME        : D35YR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D35YR
** VARIABLE_NAME   : Q_ED_3RD_HD_DEGREE_AWARD_YR_5_YR_GROUPING
** Input Variables : D3YR
```

```
** Code Name       : FIVE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF D3YR IN (9997,9998,9999) THEN D35YR = D3YR;
ELSE D35YR = 5 * INT(D3YR / 5);

** SAS_NAME        : D3DGRUS
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D3DGRUS
** VARIABLE_NAME   : Q_ED_3RD_HD_SCHOOL_REGION_US_NONUS
** Input Variables : D3RGN, D3ST
** Code Name       : US_NONUS_CODES
** Additional Notes:
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF '00' LE D3RGN LE '09' THEN D3DGRUS = 'Y';
ELSE IF D3RGN = 'L' THEN D3DGRUS = 'L';
ELSE IF D3ST = '099' THEN D3DGRUS = 'Y';
ELSE IF D3RGN = 'M' THEN D3DGRUS = 'M';
ELSE IF D3RGN IN ('X','XX') THEN D3DGRUS = 'X';
ELSE D3DGRUS = 'N';

** SAS_NAME        : D43YR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D43YR
** VARIABLE_NAME   : R_ED_4TH_HD_DEGREE_AWARD_YR_3_YR_GROUPING
** Input Variables : D4YR
** Code Name       : THREE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF D4YR IN (9997,9998,9999) THEN D43YR = D4YR;
ELSE D43YR = 3 * INT(D4YR / 3);

** SAS_NAME        : D45YR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D45YR
** VARIABLE_NAME   : R_ED_4TH_HD_DEGREE_AWARD_YR_5_YR_GROUPING
** Input Variables : D4YR
```

```
** Code Name       : FIVE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF D4YR IN (9997,9998,9999) THEN D45YR = D4YR;
ELSE D45YR = 5 * INT(D4YR / 5);

** SAS_NAME        : D4DGRUS
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D4DGRUS
** VARIABLE_NAME   : R_ED_4TH_HD_SCHOOL_REGION_US_NONUS
** Input Variables : D4RGN, D4ST
** Code Name       : US_NONUS_CODES
** Additional Notes:
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF '00' LE D4RGN LE '09' THEN D4DGRUS = 'Y';
ELSE IF D4ST = '099' THEN D4DGRUS = 'Y';
ELSE IF D4RGN = 'L' THEN D4DGRUS = 'L';
ELSE IF D4RGN = 'M' THEN D4DGRUS = 'M';
ELSE IF D4RGN IN ('X','XX') THEN D4DGRUS = 'X';
ELSE D4DGRUS = 'N';

** SAS_NAME        : D53YR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D53YR
** VARIABLE_NAME   : S_ED_5TH_HD_DEGREE_AWARD_YR_3_YR_GROUPING
** Input Variables : D5YR
** Code Name       : THREE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF D5YR IN (9997,9998,9999) THEN D53YR = D5YR;
ELSE D53YR = 3 * INT(D5YR / 3);

** SAS_NAME        : D55YR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D55YR
** VARIABLE_NAME   : S_ED_5TH_HD_DEGREE_AWARD_YR_5_YR_GROUPING
** Input Variables : D5YR
```

```
** Code Name       : FIVE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF D5YR IN (9997,9998,9999) THEN D55YR = D5YR;
ELSE D55YR = 5 * INT(D5YR / 5);

** SAS_NAME        : D5DGRUS
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_D5DGRUS
** VARIABLE_NAME   : S_ED_5TH_HD_SCHOOL_REGION_US_NONUS
** Input Variables : D5RGN, D5ST
** Code Name       : US_NONUS_CODES
** Additional Notes:
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF '00' LE D5RGN LE '09' THEN D5DGRUS = 'Y';
ELSE IF D5ST = '099' THEN D5DGRUS = 'Y';
ELSE IF D5RGN = 'L' THEN D5DGRUS = 'L';
ELSE IF D5RGN = 'M' THEN D5DGRUS = 'M';
ELSE IF D5RGN IN ('X','XX') THEN D5DGRUS = 'X';
ELSE D5DGRUS = 'N';

** SAS_NAME        : DIFAGEGR
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_DIFAGEGR
** VARIABLE_NAME   : X_DEM_DISABLE_EARLIEST_AGE_5_YR_GROUPING
** Input Variables : DIFAGE
** Code Name       : AGE_GROUP_CODES
** Additional Notes: ALL SURVEYS AND YEARS
** Variable Creation;
IF DIFAGE <= 24 THEN DIFAGEGR= 20;
IF 25 <= DIFAGE <= 29 THEN DIFAGEGR= 25;
IF 30 <= DIFAGE <= 34 THEN DIFAGEGR= 30;
IF 35 <= DIFAGE <= 39 THEN DIFAGEGR= 35;
IF 40 <= DIFAGE <= 44 THEN DIFAGEGR= 40;
IF 45 <= DIFAGE <= 49 THEN DIFAGEGR= 45;
IF 50 <= DIFAGE <= 54 THEN DIFAGEGR=50;
IF 55 <= DIFAGE <= 59 THEN DIFAGEGR= 55;
```

```
IF 60 <= DIFAGE <= 64 THEN DIFAGEGR= 60;
IF 65 <= DIFAGE <= 69 THEN DIFAGEGR= 65;
IF 70 <= DIFAGE <= 96 THEN DIFAGEGR= 70;
IF DIFAGE IN (97,98,99) THEN DIFAGEGR= DIFAGE;

** SAS_NAME        : EMSECSM
** SURVEY           : ecg23
** ALGORITHM_NAME  : R_EMSECSM
** VARIABLE_NAME   : E_JOB_EMPLR_SECTOR_CD_SUMRY
** Input Variables : EMED, NEDTP
** Code Name       : EMP_SECTOR_SUM_CODES
** Additional Notes: ALL SURVEYS 1993-2023
** Variable Creation;
IF EMED= 'L' THEN EMSECSM= 'L';
IF EMED= 'X' THEN EMSECSM= 'X';
IF EMED= 'M' THEN EMSECSM='M';
IF EMED= 'Y' THEN EMSECSM= '1';
IF EMED= 'N' AND NEDTP IN ('5','6','7','8','10') THEN EMSECSM= '2';
IF EMED= 'N' AND NEDTP IN ('1','2','3','4','9') THEN EMSECSM= '3';

** SAS_NAME        : EMTP
** SURVEY           : ecg23
** ALGORITHM_NAME  : R_EMTP03
** VARIABLE_NAME   : E_JOB_EMPLR_TYPE
** Input Variables : EDTP, NEDTP, EMED
** Code Name       : EMP_TYPE_CODE
** Additional Notes:
** Variable Creation;
IF NEDTP= 'L' AND EDTP= 'L'  AND EMED= 'L' THEN EMTP= 'L';
IF NEDTP= 'M' AND EDTP= 'M'  AND EMED= 'M' THEN EMTP= 'M';
IF NEDTP= 'X' AND EDTP= 'X'  AND EMED= 'X' THEN EMTP= 'X';
IF EMED= 'Y' AND EDTP= '1' THEN EMTP= '01';
IF EMED= 'Y' AND EDTP= '2' THEN EMTP= '02';
IF EMED= 'Y' AND EDTP= '3' THEN EMTP= '03';
IF EMED= 'Y' AND EDTP= '4' THEN EMTP= '04';
IF EMED= 'Y' AND EDTP= '5' THEN EMTP= '05';
IF EMED= 'Y' AND EDTP= '6' THEN EMTP= '06';
IF EDTP= 'L' AND NEDTP= '3' THEN EMTP= '10';
IF EDTP= 'L' AND NEDTP= '4' THEN EMTP= '11';
IF EDTP= 'L' AND NEDTP= '1' THEN EMTP= '12';
IF EDTP= 'L' AND NEDTP= '2' THEN EMTP= '13';
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IF EDTP= 'L' AND NEDTP= '5' THEN EMTP= '14';
IF EDTP= 'L' AND NEDTP= '6' THEN EMTP= '15';
IF EDTP= 'L' AND NEDTP= '7' THEN EMTP= '16';
IF EDTP= 'L' AND NEDTP= '8' THEN EMTP= '17';
IF EDTP= 'L' AND NEDTP= '9' THEN EMTP= '18';
IF EDTP= 'L' AND NEDTP= '10' THEN EMTP= '19';

** SAS_NAME        : EMUS
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_EMUS
** VARIABLE_NAME   : E_JOB_EMPLR_LOC_REGION_US_NONUS
** Input Variables : EMRGN, EMST
** Code Name       : US_NONUS_CODES
** Additional Notes:
** Variable Creation;
IF '00' LE EMRG LE '09' THEN EMUS = 'Y';
ELSE IF EMRG = 'L' THEN EMUS = 'L';
ELSE IF EMRG = 'M' THEN EMUS = 'M';
ELSE IF EMRG IN ('X','XX') THEN EMUS = 'X';
ELSE EMUS = 'N';

** SAS_NAME        : FNCRGN
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_FNCRGN
** VARIABLE_NAME   : V_DEM_CITIZENSHIP_CNTRY_REGION
** Input Variables : FNCCD
** Code Name       : REGION_CODES
** Additional Notes:
** Variable Creation;
IF FNCCD IN('099') THEN FNCRGN = '00';
ELSE IF FNCCD IN('000') THEN FNCRGN = 'X';
ELSE IF FNCCD IN('009','023','025','033','044','050','085') THEN FNCRGN = '01';
ELSE IF FNCCD IN('034','036','042','086') THEN FNCRGN = '02';
ELSE IF FNCCD IN('017','018','026','039','055','087') THEN FNCRGN = '03';
ELSE IF FNCCD IN('019','020','027','029','031','038','046','088') THEN FNCRGN = '04';
ELSE IF FNCCD IN('010','011','012','013','024','037','045','051','054','089') THEN FNCRGN = '05';
ELSE IF FNCCD IN('001','021','028','047','090') THEN FNCRGN = '06';
ELSE IF FNCCD IN('005','022','040','048','091') THEN FNCRGN = '07';
ELSE IF FNCCD IN('004','008','016','030','032','035','049','056','092') THEN FNCRGN = '08';
ELSE IF FNCCD IN('002','006','015','041','053','060','066','067','069',
'071','072','076','078','079','081','082','083','084','093','095','096') THEN FNCRGN = '09';
```

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ELSE IF FNCCD = '990' THEN FNCRGN = '99';
ELSE IF FNCCD = '998' THEN FNCRGN = 'L';
ELSE IF FNCCD = '999' THEN FNCRGN = 'M';
ELSE IF FNCCD = '997' THEN FNCRGN = 'X';
ELSE IF '100' LE FNCCD LE '199' THEN FNCRGN = '10';
ELSE IF '200' LE FNCCD LE '299' THEN FNCRGN = '20';
ELSE IF '300' LE FNCCD LE '309' THEN FNCRGN = '30';
ELSE IF '310' LE FNCCD LE '318' THEN FNCRGN = '31';
ELSE IF '330' LE FNCCD LE '359' THEN FNCRGN = '33';
ELSE IF '375' LE FNCCD LE '399' THEN FNCRGN = '37';
ELSE IF '400' LE FNCCD LE '499' THEN FNCRGN = '40';
ELSE IF '500' LE FNCCD LE '529' THEN FNCRGN = '50';
ELSE IF '550' LE FNCCD LE '599' THEN FNCRGN = '55';

** SAS_NAME        : HCAPIN
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_HCAPIN
** VARIABLE_NAME   : X_DEM_DISABLE_IND
** Input Variables : DIFHEAR, DIFSEE, DIFWALK, DIFLIFT, DIFCOGN
** Code Name       : YES_NO_CODES
** Additional Notes: ALL SURVEYS AND YEARS
** Variable Creation;
IF DIFHEAR = 'L' AND DIFSEE = 'L' AND DIFWALK = 'L' AND DIFLIFT = 'L' AND DIFCOGN = 'L' THEN HCAPIN=
'L';
IF DIFHEAR = 'M' AND DIFSEE = 'M' AND DIFWALK = 'M' AND DIFLIFT = 'M' AND DIFCOGN = 'M' THEN HCAPIN=
'M';
IF DIFHEAR = 'X' AND DIFSEE = 'X' AND DIFWALK = 'X' AND DIFLIFT = 'X' AND DIFCOGN = 'X' THEN HCAPIN=
'X';
IF DIFHEAR IN ('3','4','5') OR DIFSEE IN ('3','4','5') OR DIFWALK IN ('3','4','5') OR DIFLIFT IN
('3','4','5') OR DIFCOGN IN ('3','4','5') THEN HCAPIN= 'Y';
IF DIFHEAR IN ('1','2','9') AND DIFSEE IN ('1','2','9') AND DIFWALK IN ('1','2','9') AND DIFLIFT IN
('1','2','9') AND DIFCOGN IN ('1','2','9') THEN HCAPIN= 'N';

** SAS_NAME        : HDACY3
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_HDACY3
** VARIABLE_NAME   : O_ED_HD_DEGREE_AWARD_YR_3_YR_GROUPING
** Input Variables : DGRYR
** Code Name       : THREE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
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IF DGRYR IN (9997,9998,9999) THEN HDACY3 = DGRYR;
ELSE HDACY3 = 3 * INT(DGRYR / 3);

** SAS_NAME         : HDACYR
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_HDACYR
** VARIABLE_NAME    : O_ED_HD_DEGREE_AWARD_ACADEMIC_YR
** Input Variables  : DGRYR, HDMN
** Code Name        : NUMERIC_FOUR
** Additional Notes: ALL SURVEYS AND YEARS
** Variable Creation;
IF DGRYR IN (9997,9998,9999) THEN HDACYR = DGRYR;
ELSE IF HDMN IN (1,2,3,4,5,6,99) THEN HDACYR = DGRYR;
ELSE IF HDMN IN (7,8,9,10,11,12) THEN HDACYR = DGRYR + 1;

** SAS_NAME         : HDAY5
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_HDAY5
** VARIABLE_NAME    : O_ED_HD_DEGREE_AWARD_YR_5_YR_GROUPING
** Input Variables  : DGRYR
** Code Name        : FIVE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF DGRYR IN (9997,9998,9999) THEN HDAY5 = DGRYR;
ELSE HDAY5 = 5 * INT(DGRYR / 5);

** SAS_NAME         : HDDGRUS
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_HDDGRUS
** VARIABLE_NAME    : O_ED_HD_SCHOOL_REGION_US_NONUS
** Input Variables  : HDRGN, HDST
** Code Name        : US_NONUS_CODES
** Additional Notes:
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF '00' LE HDRGN LE '09' THEN HDDGRUS = 'Y';
ELSE IF HDRGN = 'L' THEN HDDGRUS = 'L';
ELSE IF HDST = '099' THEN HDDGRUS = 'Y';
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```
ELSE IF HDRGN = 'M' THEN HDDGRUS = 'M';
ELSE IF HDRGN IN ('X','XX') THEN HDDGRUS = 'X';
ELSE HDDGRUS = 'N';

** SAS_NAME         : LFSTAT
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_LFSTAT
** VARIABLE_NAME    : A_JOB_STATUS_LABOR_FORCE_STAT
** Input Variables  : WRKG, LOOKWK, NWLAY
** Code Name        : LABOR_FORCE_STATUS_CODES
** Additional Notes: ALL SURVEYS AND YEARS
** Variable Creation;
IF WRKG = 'Y' THEN LFSTAT = '1';
IF WRKG = 'N' AND LOOKWK = 'N' AND NWLAY = 'Y' THEN LFSTAT = '2';
IF WRKG = 'N' AND LOOKWK = 'Y' AND NWLAY = 'N' THEN LFSTAT = '2';
IF WRKG = 'N' AND LOOKWK = 'Y' AND NWLAY = 'Y' THEN LFSTAT = '2';
IF WRKG = 'N' AND LOOKWK = 'N' AND NWLAY = 'N' THEN LFSTAT = '3';

** SAS_NAME         : MARIND
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_MARIND
** VARIABLE_NAME    : W_DEM_MARITAL_STAT_MARRIED
** Input Variables  : MARSTA
** Code Name        : YES_NO_CODES
** Additional Notes: ALL SURVEYS AND YEARS
** Variable Creation;
IF MARSTA= '1' THEN MARIND= 'Y';
IF MARSTA ^= '1' THEN MARIND= 'N';

** SAS_NAME         : MINRTY
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_MINRTY03
** VARIABLE_NAME    : U_DEM_RACE_MINORITY_IND
** Input Variables  : RACEM, HISPCAT
** Code Name        : YES_NO_CODES
** Additional Notes: ALL SURVEYS 2003-2023
** Variable Creation;
IF HISPANIC = 'Y' OR RACEM IN ('2','3','5','6') THEN MINRTY= 'Y';
ELSE IF HISPANIC IN ('N', 'L') AND RACEM IN ('1', '4') THEN MINRTY= 'N';
ELSE MINRTY= 'X';
```

```
** SAS_NAME         : MR3YR
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_MR3YR
** VARIABLE_NAME    : M_ED_MR_DEGREE_AWARD_YR_3_YR_GROUPING
** Input Variables  : MRYR
** Code Name        : THREE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF MRYR IN (9997,9998,9999) THEN MR3YR = MRYR;
ELSE MR3YR = 3 * INT(MRYR / 3);

** SAS_NAME         : MR5YR
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_MR5YR
** VARIABLE_NAME    : M_ED_MR_DEGREE_AWARD_YR_5_YR_GROUPING
** Input Variables  : MRYR
** Code Name        : FIVE_YEAR_GROUP_CODES
** Additional Notes:
** Variable Creation;
IF MRYR IN (9997,9998,9999) THEN MR5YR = MRYR;
ELSE MR5YR = 5 * INT(MRYR / 5);

** SAS_NAME         : MRDACYR
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_MRDACYR
** VARIABLE_NAME    : M_ED_MR_DEGREE_AWARD_ACADEMIC_YR
** Input Variables  : MRYR, MRMN
** Code Name        : NUMERIC_FOUR
** Additional Notes: ALL SURVEYS AND YEARS
** Variable Creation;
IF MRYR IN (9997,9998,9999) THEN MRDACYR = MRYR;
ELSE IF MRMN IN (1,2,3,4,5,6,99) THEN MRDACYR = MRYR;
ELSE IF MRMN IN (7,8,9,10,11,12) THEN MRDACYR = MRYR + 1;

** SAS_NAME         : MRDGRUS
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_MRDGRUS
** VARIABLE_NAME    : M_ED_MR_SCHOOL_REGION_US_NONUS
** Input Variables  : MRRGN, MRST
** Code Name        : US_NONUS_CODES
** Additional Notes:
```

```
   Please note that confidentiality suppression of input state variables
   could impact the outcome of the region/US recode variables. In these
   cases the correct state was used as input to the region/US recodes but
   the user will not be able to replicate results with this algorithm. ;
** Variable Creation;
IF '00' LE MRRGN LE '09' THEN MRDGRUS = 'Y';
ELSE IF MRST = '099' THEN MRDGRUS = 'Y';
ELSE IF MRRGN = 'L' THEN MRDGRUS = 'L';
ELSE IF MRRGN = 'M' THEN MRDGRUS = 'M';
ELSE IF MRRGN IN ('X','XX') THEN MRDGRUS = 'X';
ELSE MRDGRUS = 'N';

** SAS_NAME         : N2OCMLST
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_N2OCMLST
** VARIABLE_NAME    : C_JOB_LAST_OCC_GRP_MAJOR_NEW2
** Input Variables  : N3OCLST
** Code Name        : MAJOR_OCC_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N3OCLST IN ('999997','999979') THEN N2OCMLST = '7';
ELSE IF N3OCLST IN ('999998','999989') THEN N2OCMLST = '8';
ELSE IF N3OCLST IN ('999999') THEN N2OCMLST = '9';
ELSE N2OCMLST = SUBSTR(N3OCLST,1,1);
** SAS_NAME         : N2OCBLST
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_N2OCBLST
** VARIABLE_NAME    : C_JOB_LAST_OCC_GRP_BROAD_NEW2
** Input Variables  : N3OCLST
** Code Name        : MAJOR_OCC_BROAD_CODES_NEW2
** Additional Notes:
** Variable Creation;
IF N2OCMLST in ('1','2','3','4','5') THEN N2OCBLST = '1';
ELSE IF N2OCMLST = '6' THEN N2OCBLST = '2';
ELSE IF N2OCMLST = '7' THEN N2OCBLST = '3';
ELSE IF N2OCMLST = '8' THEN N2OCBLST = '4';

** SAS_NAME         : N2OCNLST
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_N2OCNLST
** VARIABLE_NAME    : C_JOB_LAST_OCC_GRP_MINOR_NEW2
```

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** Input Variables : N3OCLST
** Code Name       : MINOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N3OCLST IN ('999997','999979') THEN N2OCNLST = '97';
ELSE IF N3OCLST IN ('999998','999989') THEN N2OCNLST = '98';
ELSE IF N3OCLST IN ('999999') THEN N2OCNLST = '99';
ELSE N2OCNLST = SUBSTR(N3OCLST,1,2);

** SAS_NAME        : N3OCPRMG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_N3OCPRMG
** VARIABLE_NAME   : B_JOB_OCC_GRP_MAJOR_NEW2
** Input Variables : N3OCPR
** Code Name       : MAJOR_OCC_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N3OCPR IN ('999997','999979') THEN N3OCPRMG = '7';
ELSE IF N3OCPR IN ('999998','999989') THEN N3OCPRMG = '8';
ELSE IF N3OCPR IN ('999999') THEN N3OCPRMG = '9';
ELSE N3OCPRMG = SUBSTR(N3OCPR,1,1);

** SAS_NAME        : N3OCPRBG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_N3OCPRBG
** VARIABLE_NAME   : B_JOB_OCC_GRP_BROAD_NEW2
** Input Variables : N3OCPRMG
** Code Name       : MAJOR_OCC_BROAD_CODES_NEW2
** Additional Notes:
** Variable Creation;
IF N3OCPRMG in ('1','2','3','4','5') THEN N3OCPRBG = '1';
ELSE IF N3OCPRMG = '6' THEN N3OCPRBG = '2';
ELSE IF N3OCPRMG = '7' THEN N3OCPRBG = '3';
ELSE IF N3OCPRMG = '8' THEN N3OCPRBG = '4';

** SAS_NAME        : N3OCPRNG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_N3OCPRNG
** VARIABLE_NAME   : B_JOB_OCC_GRP_MINOR_NEW2
** Input Variables : N3OCPR
** Code Name       : MINOR_GROUP_CODES_NEW
```

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** Additional Notes:
** Variable Creation;
IF N3OCPR IN ('999997','999979') THEN N3OCPRNG = '97';
ELSE IF N3OCPR IN ('999998','999989') THEN N3OCPRNG = '98';
ELSE IF N3OCPR IN ('999999') THEN N3OCPRNG = '99';
ELSE N3OCPRNG = SUBSTR(N3OCPR,1,2);

** SAS_NAME         : N2ACEDMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_N2ACEDMG
** VARIABLE_NAME    : N_ED_REF_WK_ENROLL_ED_CAT_MAJOR_NEW
** Input Variables  : N2ACED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2ACED IN ('999997','999979') THEN N2ACEDMG = '7';
ELSE IF N2ACED IN ('999998','999989') THEN N2ACEDMG = '8';
ELSE IF N2ACED IN ('999999') THEN N2ACEDMG = '9';
ELSE N2ACEDMG = SUBSTR(N2ACED,1,1);

** SAS_NAME         : N2ACEDNG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_N2ACEDNG
** VARIABLE_NAME    : N_ED_REF_WK_ENROLL_ED_CAT_MINOR_NEW
** Input Variables  : N2ACED
** Code Name        : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2ACED IN ('999997','999979') THEN N2ACEDNG = '97';
ELSE IF N2ACED IN ('999998','999989') THEN N2ACEDNG = '98';
ELSE IF N2ACED IN ('999999') THEN N2ACEDNG = '99';
ELSE N2ACEDNG = SUBSTR(N2ACED,1,2);

** SAS_NAME         : NBAMEMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NBAMEMG
** VARIABLE_NAME    : J_ED_BA_MAJOR_ED_GROUP_MAJOR_NEW
** Input Variables  : N2BAMED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
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IF N2BAMED IN ('999997','999979') THEN NBAMEMG = '7';
ELSE IF N2BAMED IN ('999998','999989') THEN NBAMEMG = '8';
ELSE IF N2BAMED IN ('999999') THEN NBAMEMG = '9';
ELSE NBAMEMG = SUBSTR(N2BAMED,1,1);

** SAS_NAME         : NBAMEBG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NBAMEBG
** VARIABLE_NAME    : J_ED_BA_MAJOR_ED_GROUP_BROAD_NEW
** Input Variables : NBAMEMG
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF NBAMEMG in ('1','2','3','4','5') THEN NBAMEBG = '1';
ELSE IF NBAMEMG = '6' THEN NBAMEBG = '2';
ELSE IF NBAMEMG = '7' THEN NBAMEBG = '3';
ELSE IF NBAMEMG = '8' THEN NBAMEBG = '4';

** SAS_NAME         : NBAMENG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NBAMENG
** VARIABLE_NAME    : J_ED_BA_MAJOR_ED_GROUP_MINOR_NEW
** Input Variables : N2BAMED
** Code Name        : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2BAMED IN ('999997','999979') THEN NBAMENG = '97';
ELSE IF N2BAMED IN ('999998','999989') THEN NBAMENG = '98';
ELSE IF N2BAMED IN ('999999') THEN NBAMENG = '99';
ELSE NBAMENG = SUBSTR(N2BAMED,1,2);

** SAS_NAME         : NBANENG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NBANENG
** VARIABLE_NAME    : J_ED_BA_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW
** Input Variables : N2BANED
** Code Name        : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2BANED IN ('999997','999979') THEN NBANENG = '97';
ELSE IF N2BANED IN ('999998','999989') THEN NBANENG = '98';
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ELSE IF N2BANED IN ('999999') THEN NBANENG = '99';
ELSE NBANENG = SUBSTR(N2BANED,1,2);

** SAS_NAME         : NBASEMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NBASEMG
** VARIABLE_NAME    : J_ED_BA_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW
** Input Variables  : N2BANED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2BANED IN ('999997','999979') THEN NBASEMG = '7';
ELSE IF N2BANED IN ('999998','999989') THEN NBASEMG = '8';
ELSE IF N2BANED IN ('999999') THEN NBASEMG = '9';
ELSE NBASEMG = SUBSTR(N2BANED,1,1);

** SAS_NAME         : ND2MEMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_ND2MEMG
** VARIABLE_NAME    : P_ED_2ND_HD_MAJOR_ED_GRP_MAJOR_NEW
** Input Variables  : N2D2MED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D2MED IN ('999997','999979') THEN ND2MEMG = '7';
ELSE IF N2D2MED IN ('999998','999989') THEN ND2MEMG = '8';
ELSE IF N2D2MED IN ('999999') THEN ND2MEMG = '9';
ELSE ND2MEMG = SUBSTR(N2D2MED,1,1);

** SAS_NAME         : ND2MENG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_ND2MENG
** VARIABLE_NAME    : P_ED_2ND_HD_MAJOR_ED_GRP_MINOR_NEW
** Input Variables  : N2D2MED
** Code Name        : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D2MED IN ('999997','999979') THEN ND2MENG = '97';
ELSE IF N2D2MED IN ('999998','999989') THEN ND2MENG = '98';
ELSE IF N2D2MED IN ('999999') THEN ND2MENG = '99';
ELSE ND2MENG = SUBSTR(N2D2MED,1,2);
```

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** SAS_NAME        : ND2NENG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND2NENG
** VARIABLE_NAME   : P_ED_2ND_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW
** Input Variables : N2D2NED
** Code Name       : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D2NED IN ('999997','999979') THEN ND2NENG = '97';
ELSE IF N2D2NED IN ('999998','999989') THEN ND2NENG = '98';
ELSE IF N2D2NED IN ('999999') THEN ND2NENG = '99';
ELSE ND2NENG = SUBSTR(N2D2NED,1,2);

** SAS_NAME        : ND2SEMG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND2SEMG
** VARIABLE_NAME   : P_ED_2ND_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW
** Input Variables : N2D2NED
** Code Name       : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D2NED IN ('999997','999979') THEN ND2SEMG = '7';
ELSE IF N2D2NED IN ('999998','999989') THEN ND2SEMG = '8';
ELSE IF N2D2NED IN ('999999') THEN ND2SEMG = '9';
ELSE ND2SEMG = SUBSTR(N2D2NED,1,1);

** SAS_NAME        : ND3MEMG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND3MEMG
** VARIABLE_NAME   : Q_ED_3RD_HD_MAJOR_ED_GRP_MAJOR_NEW
** Input Variables : N2D3MED
** Code Name       : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D3MED IN ('999997','999979') THEN ND3MEMG = '7';
ELSE IF N2D3MED IN ('999998','999989') THEN ND3MEMG = '8';
ELSE IF N2D3MED IN ('999999') THEN ND3MEMG = '9';
ELSE ND3MEMG = SUBSTR(N2D3MED,1,1);

** SAS_NAME        : ND3MENG
```

```
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND3MENG
** VARIABLE_NAME   : Q_ED_3RD_HD_MAJOR_ED_GRP_MINOR_NEW
** Input Variables : N2D3MED
** Code Name       : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D3MED IN ('999997','999979') THEN ND3MENG = '97';
ELSE IF N2D3MED IN ('999998','999989') THEN ND3MENG = '98';
ELSE IF N2D3MED IN ('999999') THEN ND3MENG = '99';
ELSE ND3MENG = SUBSTR(N2D3MED,1,2);

** SAS_NAME        : ND3NENG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND3NENG
** VARIABLE_NAME   : Q_ED_3RD_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW
** Input Variables : N2D3NED
** Code Name       : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D3NED IN ('999997','999979') THEN ND3NENG = '97';
ELSE IF N2D3NED IN ('999998','999989') THEN ND3NENG = '98';
ELSE IF N2D3NED IN ('999999') THEN ND3NENG = '99';
ELSE ND3NENG = SUBSTR(N2D3NED,1,2);

** SAS_NAME        : ND3SEMG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND3SEMG
** VARIABLE_NAME   : Q_ED_3RD_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW
** Input Variables : N2D3NED
** Code Name       : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D3NED IN ('999997','999979') THEN ND3SEMG = '7';
ELSE IF N2D3NED IN ('999998','999989') THEN ND3SEMG = '8';
ELSE IF N2D3NED IN ('999999') THEN ND3SEMG = '9';
ELSE ND3SEMG = SUBSTR(N2D3NED,1,1);

** SAS_NAME        : ND4MEMG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND4MEMG
```

```
** VARIABLE_NAME   : R_ED_4TH_HD_MAJOR_ED_GRP_MAJOR_NEW
** Input Variables : N2D4MED
** Code Name       : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D4MED IN ('999997','999979') THEN ND4MEMG = '7';
ELSE IF N2D4MED IN ('999998','999989') THEN ND4MEMG = '8';
ELSE IF N2D4MED IN ('999999') THEN ND4MEMG = '9';
ELSE ND4MEMG = SUBSTR(N2D4MED,1,1);

** SAS_NAME        : ND4MENG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND4MENG
** VARIABLE_NAME   : R_ED_4TH_HD_MAJOR_ED_GRP_MINOR_NEW
** Input Variables : N2D4MED
** Code Name       : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D4MED IN ('999997','999979') THEN ND4MENG = '97';
ELSE IF N2D4MED IN ('999998','999989') THEN ND4MENG = '98';
ELSE IF N2D4MED IN ('999999') THEN ND4MENG = '99';
ELSE ND4MENG = SUBSTR(N2D4MED,1,2);

** SAS_NAME        : ND4NENG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND4NENG
** VARIABLE_NAME   : R_ED_4TH_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW
** Input Variables : N2D4NED
** Code Name       : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D4NED IN ('999997','999979') THEN ND4NENG = '97';
ELSE IF N2D4NED IN ('999998','999989') THEN ND4NENG = '98';
ELSE IF N2D4NED IN ('999999') THEN ND4NENG = '99';
ELSE ND4NENG = SUBSTR(N2D4NED,1,2);

** SAS_NAME        : ND4SEMG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND4SEMG
** VARIABLE_NAME   : R_ED_4TH_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW
** Input Variables : N2D4NED
```

```
** Code Name       : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D4NED IN ('999997','999979') THEN ND4SEMG = '7';
ELSE IF N2D4NED IN ('999998','999989') THEN ND4SEMG = '8';
ELSE IF N2D4NED IN ('999999') THEN ND4SEMG = '9';
ELSE ND4SEMG = SUBSTR(N2D4NED,1,1);

** SAS_NAME        : ND5MEMG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND5MEMG
** VARIABLE_NAME   : S_ED_5TH_HD_MAJOR_ED_GRP_MAJOR_NEW
** Input Variables : N2D5MED
** Code Name       : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D5MED IN ('999997','999979') THEN ND5MEMG = '7';
ELSE IF N2D5MED IN ('999998','999989') THEN ND5MEMG = '8';
ELSE IF N2D5MED IN ('999999') THEN ND5MEMG = '9';
ELSE ND5MEMG = SUBSTR(N2D5MED,1,1);

** SAS_NAME        : ND5MENG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND5MENG
** VARIABLE_NAME   : S_ED_5TH_HD_MAJOR_ED_GRP_MINOR_NEW
** Input Variables : N2D5MED
** Code Name       : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D5MED IN ('999997','999979') THEN ND5MENG = '97';
ELSE IF N2D5MED IN ('999998','999989') THEN ND5MENG = '98';
ELSE IF N2D5MED IN ('999999') THEN ND5MENG = '99';
ELSE ND5MENG = SUBSTR(N2D5MED,1,2);

** SAS_NAME        : ND5NENG
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_ND5NENG
** VARIABLE_NAME   : S_ED_5TH_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW
** Input Variables : N2D5NED
** Code Name       : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
```

```
** Variable Creation;
IF N2D5NED IN ('999997','999979') THEN ND5NENG = '97';
ELSE IF N2D5NED IN ('999998','999989') THEN ND5NENG = '98';
ELSE IF N2D5NED IN ('999999') THEN ND5NENG = '99';
ELSE ND5NENG = SUBSTR(N2D5NED,1,2);

** SAS_NAME         : ND5SEMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_ND5SEMG
** VARIABLE_NAME    : S_ED_5TH_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW
** Input Variables : N2D5NED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2D5NED IN ('999997','999979') THEN ND5SEMG = '7';
ELSE IF N2D5NED IN ('999998','999989') THEN ND5SEMG = '8';
ELSE IF N2D5NED IN ('999999') THEN ND5SEMG = '9';
ELSE ND5SEMG = SUBSTR(N2D5NED,1,1);

** SAS_NAME         : NDGMEMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NDGMEMG
** VARIABLE_NAME    : O_ED_HD_MAJOR_ED_GRP_MAJOR_NEW
** Input Variables : N2DGRMED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2DGRMED IN ('999997','999979') THEN NDGMEMG = '7';
ELSE IF N2DGRMED IN ('999998','999989') THEN NDGMEMG = '8';
ELSE IF N2DGRMED IN ('999999') THEN NDGMEMG = '9';
ELSE NDGMEMG = SUBSTR(N2DGRMED,1,1);

** SAS_NAME         : NDGMEBG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NDGMEBG
** VARIABLE_NAME    : O_ED_HD_MAJOR_ED_GRP_BROAD_NEW
** Input Variables : NDGMEMG
** Code Name        : MAJOR_GROUP_BROAD_NEW
** Additional Notes:
** Variable Creation;
IF NDGMEMG in ('1','2','3','4','5') THEN NDGMEBG = '1';
```

```
ELSE IF NDGMEMG = '6' THEN NDGMEBG = '2';
ELSE IF NDGMEMG = '7' THEN NDGMEBG = '3';
ELSE IF NDGMEMG = '8' THEN NDGMEBG = '4';

** SAS_NAME         : NDGMENG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NDGMENG
** VARIABLE_NAME    : O_ED_HD_MAJOR_ED_GRP_MINOR_NEW
** Input Variables  : N2DGRMED
** Code Name        : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2DGRMED IN ('999997','999979') THEN NDGMENG = '97';
ELSE IF N2DGRMED IN ('999998','999989') THEN NDGMENG = '98';
ELSE IF N2DGRMED IN ('999999') THEN NDGMENG = '99';
ELSE NDGMENG = SUBSTR(N2DGRMED,1,2);

** SAS_NAME         : NHDNENG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NHDNENG
** VARIABLE_NAME    : O_ED_HD_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW
** Input Variables  : N2HDNED
** Code Name        : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2HDNED IN ('999997','999979') THEN NHDNENG = '97';
ELSE IF N2HDNED IN ('999998','999989') THEN NHDNENG = '98';
ELSE IF N2HDNED IN ('999999') THEN NHDNENG = '99';
ELSE NHDNENG = SUBSTR(N2HDNED,1,2);

** SAS_NAME         : NHDSEMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NHDSEMG
** VARIABLE_NAME    : O_ED_HD_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW
** Input Variables  : N2HDNED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2HDNED IN ('999997','999979') THEN NHDSEMG = '7';
ELSE IF N2HDNED IN ('999998','999989') THEN NHDSEMG = '8';
ELSE IF N2HDNED IN ('999999') THEN NHDSEMG = '9';
```

```
ELSE NHDSEMG = SUBSTR(N2HDNED,1,1);

** SAS_NAME         : NMRMEMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NMRMEMG
** VARIABLE_NAME    : M_ED_MR_MAJOR_ED_GRP_MAJOR_NEW
** Input Variables  : N2MRMED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2MRMED IN ('999997','999979') THEN NMRMEMG = '7';
ELSE IF N2MRMED IN ('999998','999989') THEN NMRMEMG = '8';
ELSE IF N2MRMED IN ('999999') THEN NMRMEMG = '9';
ELSE NMRMEMG = SUBSTR(N2MRMED,1,1);

** SAS_NAME         : NMRMEBG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NMRMEBG
** VARIABLE_NAME    : M_ED_MR_MAJOR_ED_GRP_BROAD_NEW
** Input Variables  : NMRMEMG
** Code Name        : MAJOR_GROUP_BROAD_NEW
** Additional Notes:
** Variable Creation;
IF NMRMEMG in ('1','2','3','4','5') THEN NMRMEBG = '1';
ELSE IF NMRMEMG = '6' THEN NMRMEBG = '2';
ELSE IF NMRMEMG = '7' THEN NMRMEBG = '3';
ELSE IF NMRMEMG = '8' THEN NMRMEBG = '4';

** SAS_NAME         : NMRMENG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NMRMENG
** VARIABLE_NAME    : M_ED_MR_MAJOR_ED_GRP_MINOR_NEW
** Input Variables  : N2MRMED
** Code Name        : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2MRMED IN ('999997','999979') THEN NMRMENG = '97';
ELSE IF N2MRMED IN ('999998','999989') THEN NMRMENG = '98';
ELSE IF N2MRMED IN ('999999') THEN NMRMENG = '99';
ELSE NMRMENG = SUBSTR(N2MRMED,1,2);
```

```
** SAS_NAME         : NMRNENG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NMRNENG
** VARIABLE_NAME    : M_ED_MR_MAJOR_2ND_MAJ_ED_GRP_MINOR_NEW
** Input Variables : N2MRNED
** Code Name        : MINOR_ED_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2MRNED IN ('999997','999979') THEN NMRNENG= '97';
ELSE IF N2MRNED IN ('999998','999989') THEN NMRNENG = '98';
ELSE IF N2MRNED IN ('999999') THEN NMRNENG = '99';
ELSE NMRNENG = SUBSTR(N2MRNED,1,2);

** SAS_NAME         : NMRSEMG
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_NMRSEMG
** VARIABLE_NAME    : M_ED_MR_MAJOR_2ND_MAJ_ED_GRP_MAJOR_NEW
** Input Variables : N2MRNED
** Code Name        : MAJOR_GROUP_CODES_NEW
** Additional Notes:
** Variable Creation;
IF N2MRNED IN ('999997','999979') THEN NMRSEMG = '7';
ELSE IF N2MRNED IN ('999998','999989') THEN NMRSEMG = '8';
ELSE IF N2MRNED IN ('999999') THEN NMRSEMG = '9';
ELSE NMRSEMG = SUBSTR(N2MRNED,1,1);

** SAS_NAME         : PACIFIC
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_PACIFIC
** VARIABLE_NAME    : U_DEM_RACE_PACIFIC
** Input Variables : HAWAIIAN, CHAMORRO, SAMOAN, O_PACIFIC
** Code Name        : PACIFIC _NEW
** Additional Notes: PACIFIC must be generated before RACEM, 2023 only
** Variable Creation;
IF HAWAIIAN = 'Y' OR CHAMORRO = 'Y' OR SAMOAN = 'Y' OR O_PACIFIC = 'Y' THEN PACIFIC = 'Y';
ELSE IF HAWAIIAN = 'N' AND CHAMORRO = 'N' AND SAMOAN = 'N' AND PACIFIC = 'N' THEN PACIFIC = 'N';


** SAS_NAME         : RESPLCUS
** SURVEY           : ecg23
** ALGORITHM_NAME   : R_RESPLCUS
```

```
** VARIABLE_NAME   : U_RESPONDENT_LOCATION_US_NONUS
** Input Variables : RESPLOC
** Code Name       : US_NONUS_CODES
** Additional Notes:
** Variable Creation;
IF '00' LE RESPLOC LE '09' THEN RESPLCUS = 'Y';
ELSE IF RESPLOC = 'L' THEN RESPLCUS = 'L';
ELSE IF RESPLOC = 'M' THEN RESPLCUS = 'M';
ELSE IF RESPLOC IN ('X','XX') THEN RESPLCUS = 'X';
ELSE RESPLCUS = 'N';

** SAS_NAME        : WAPRRD
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_WAPRRD
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIM_RSRCH_DEV_NEWRD
** Input Variables : WAPRI
** Code Name       : WORK_ PRIM_RSRCH_DEV_NEWRD_CODES
** Additional Notes: ALL SURVEYS 2019-2023
** Variable Creation;
IF WAPRI in ('02','03','04')
THEN WAPRRD = 'Y';
ELSE IF WAPRI in ('L','M','X') THEN WAPRRD = WAPRI;
ELSE WAPRRD = 'N';

** SAS_NAME        : WAPRSM
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_WAPRSM03
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIMRY_SUMRY
** Input Variables : WAPRI
** Code Name       : WORK_SUMMARY_CODES
** Additional Notes: ALL SURVEYS 2003-2023
** Variable Creation;
IF WAPRI IN ('02','03','04','05') THEN WAPRSM= '1';
IF WAPRI= '13' THEN WAPRSM= '2';
IF WAPRI IN ('01','07','08','11','12') THEN WAPRSM= '3';
IF WAPRI= '06' THEN WAPRSM= '4';
IF WAPRI IN ('09','10','14') THEN WAPRSM= '5';
IF WAPRI IN ('L', 'M', 'X') THEN WAPRSM = WAPRI;

** SAS_NAME        : WAPRSM2
** SURVEY          : ecg23
```

```
** ALGORITHM_NAME  : R_WAPRSM2
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIMRY_SUMRY_NEWRD
** Input Variables : WAPRI
** Code Name       : WORK_SUMMARY_CODES2
** Additional Notes: ALL SURVEYS 2019-2023
** Variable Creation;
IF WAPRI in ('02','03','04') THEN WAPRSM2 = '1';
ELSE IF WAPRI = '13' THEN WAPRSM2 = '2';
ELSE IF WAPRI in ('01','07','08','11','12') THEN WAPRSM2 = '3';
ELSE IF WAPRI = '06' THEN WAPRSM2 = '4';
ELSE IF WAPRI in ('05','09','10','14') THEN WAPRSM2 = '5';
ELSE IF WAPRI IN ('L', 'M', 'X') THEN WAPRSM2 = WAPRI;

** SAS_NAME        : WAPRSM3
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_WAPRSM23
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIMRY_SUMRY_NEWRD2
** Input Variables : WAPRI
** Code Name       : WORK_SUMMARY_CODES2
** Additional Notes: ALL SURVEYS 2023
** Variable Creation;
IF WAPRI in ('02','03','04') THEN WAPRSM2 = '1';
ELSE IF WAPRI = '13' THEN WAPRSM2 = '2';
ELSE IF WAPRI in ('01','07','08','11','12') THEN WAPRSM2 = '3';
ELSE IF WAPRI = '06' THEN WAPRSM2 = '4';
ELSE IF WAPRI = '05' THEN WAPRSM2 = '5';
ELSE IF WAPRI in ('09','10','14') THEN WAPRSM2 = '6';
ELSE IF WAPRI IN ('L', 'M', 'X') THEN WAPRSM2 = WAPRI;

** SAS_NAME        : WASCSM
** SURVEY          : ecg23
** ALGORITHM_NAME  : R_WASCSM03
** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_SECONDARY_SUMRY
** Input Variables : WASEC
** Code Name       : WORK_SUMMARY_CODES
** Additional Notes: ALL SURVEYS 2003-2023
** Variable Creation;
IF WASEC IN ('02','03','04','05') THEN WASCSM= '1';
IF WASEC= '13' THEN WASCSM= '2';
IF WASEC IN ('01','07','08','11','12') THEN WASCSM= '3';
IF WASEC= '06' THEN WASCSM= '4';
```

```
   IF WASEC IN ('09','10','14') THEN WASCSM= '5';
   IF WASEC IN ('00','0') THEN WASCSM= '6';
   ELSE IF WASEC IN ('L', 'M', 'X') THEN WASCSM = WASEC;

   ** SAS_NAME        : WASCSM2
   ** SURVEY          : ecg23
   ** ALGORITHM_NAME  : R_WASCSM2
   ** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIMRY_SUMRY_NEWRD
   ** Input Variables : WASEC
   ** Code Name       : WORK_SUMMARY_CODES2
   ** Additional Notes: ALL SURVEYS 2019-2023
   ** Variable Creation;
   IF WASEC in ('02','03','04') THEN WASCSM2 =  '1';
   ELSE IF WASEC = '13' THEN WASCSM2 = '2';
   ELSE IF WASEC in ('01','07','08','11','12') THEN WASCSM2 = '3';
   ELSE IF WASEC = '06' THEN WASCSM2 = '4';
   ELSE IF WASEC in ('05','09','10','14') THEN WASCSM2 = '5';
   ELSE IF WASEC = '00' THEN WASCSM2 = '6';
   ELSE IF WASEC IN ('L', 'M', 'X') THEN WASCSM2 = WASEC;

   ** SAS_NAME        : WASCSM3
   ** SURVEY          : ecg23
   ** ALGORITHM_NAME  : R_WASCSM3
   ** VARIABLE_NAME   : F_JOB_WRK_ACTIVITY_PRIMRY_SUMRY_NEWRD2
   ** Input Variables : WASEC
   ** Code Name       : WORK_SUMMARY_CODES2
   ** Additional Notes: ALL SURVEYS 2023
   ** Variable Creation;
   IF WASEC in ('02','03','04') THEN WASCSM2 =  '1';
   ELSE IF WASEC = '13' THEN WASCSM2 = '2';
   ELSE IF WASEC in ('01','07','08','11','12') THEN WASCSM2 = '3';
   ELSE IF WASEC = '06' THEN WASCSM2 = '4';
   ELSE IF WASEC in ('09','10','14') THEN WASCSM2 = '5';
   ELSE IF WASEC = '05' THEN WASCSM2 = '6';
   ELSE IF WASEC = '00' THEN WASCSM2 = '7';
   ELSE IF WASEC IN ('L', 'M', 'X') THEN WASCSM2 = WASEC;
run;
```