Longitudinal Aging Study Amsterdam, april 2020

Syntax for the cardiovascular disease ascertainment algorithms
Cohort 1

************ALGORITHMS CARDIOVASCULAR DISEASES (CVD) in LASA COHORT 1***********.
*Syntax cardiovascular diseases - revised version 2018.
* Cardiac diseases: Angina Pectoris (AP), Congestive Heart Failure (CHF), Myocardial Infarction (MI), arrhythmia (ARI).
* Vascular diseases: Cerebrovascular accident (CVA) en Peripheral arterial disease (PAD).
* SPSS-syntax combines three data sources: self-report, medication and general practitioner (GP) diagnoses
  (Revised version of the syntax and algorithms made by Bianca Schalk & Marijke Bremmer & Marjolein Visser).

*Currently available for LASA waves: B C D E F G H I.

*for more information: see word document available by Jan Poppelaars and the flow charts on the website.

*Used LASA datafiles:
035 = SR diagnosis
352 = use of medication (predefined groups of medication)
152 = use of medication
602 = SR diagnosis, telephonic interview with proxy
702 = SR diagnosis, telephonic interview with respondent
G01 = GP diagnosis
Z008 = year of interview
Z002 = cohort type & data available or not.

match files /file = '*your directory here*\LASAB035.SAV'
         /file = '*your directory here*\LASABG01.SAV'
         /file = '*your directory here*\LASACG01.SAV'
         /file = '*your directory here*\LASAB352.SAV'
         /file = '*your directory here*\LASAB152.SAV'
         /file = '*your directory here*\LASAZ008.SAV'
         /file = '*your directory here*\LASAC035.SAV'
         /file = '*your directory here*\LASAC352.SAV'
         /file = '*your directory here*\LASAC152.SAV'
         /file = '*your directory here*\LASAC602.SAV'
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         /file = '*your directory here*\LASAD702.SAV'
         /file = '*your directory here*\LASAD035.SAV'
         /file = '*your directory here*\LASAZ002.SAV'
         /file = '*your directory here*\LASAE602.SAV'
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         /file = '*your directory here*\LASAE035.SAV'
         /file = '*your directory here*\LASAEG01.SAV'

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        /file = '*your directory here*\LASAI602.SAV'
        /file = '*your directory here*\LASAI702.SAV'
        /file = '*your directory here*\LASAI035.SAV'
        /file = '*your directory here*\LASAI352.SAV'
        /file = '*your directory here*\LASAI152.SAV'
        /by respnr
        /keep respnr cohort bresult bhart01 bhart05 bhart10 bhart11 bhart12 bhart13 bhart15
bhart15b bhart15c bhart15d bdiabe01 bdiabe07 bdiabe09 bdiabe11 bdiabe12 bcva01 bartvei1
bartvei5 bartvei7 bartvei8 bartve8b bartve8c
        bartve8d cgap cgapy cgaps cgarrth cgarrty cgarrths cgcva cgcvay cgcvas cgartvei
cgartvey cgartves cgmi cgmiy cgmis cgchf cgchfy cgchfs bmed_ang bmed_ari bmed_diu bmed_ino
bmed_hyp bgcva bgcvay bgclan
        bgclany t2_dat bmvar13 bmatc1 bmatc2 bmatc3 bmatc4 bmatc5 bmatc6 bmmed1
bmmed2 bmmed3 bmmed4 bmmed5 bmmed6 chart01 chart05 chart10 chart11 chart12 chart13
cdiabe01 cdiabe07 cdiabe09 cdiabe11 cdiabe12 ccva01 cartvei1
        cartvei5 cartvei7 chart15 chart15d chart15c chart15b cartve8b cartve8d cartve8c
cartve8 cmed_ang cmed_ari cmed_diu cmed_ino cmed_hyp t3_dat cmvar13 cmatc1 cmatc2 cmatc3
cmatc4 cmatc5 cmatc6 cmmed1
        cmatc7 cmatc8 Cmmed7 Cmmed8 dmatc7 dmatc8 Dmmed7 Dmmed8 ematc7 ematc8
Emmed7 Emmed8 fmatc7 fmatc8 Fmmed7 Fmmed8  gmatc7 gmatc8 gmatc9 gmatc10 gmatc11
gmatc12 gmatc13 gmatc14 gmatc15 gmatc16
        Gmmed7 Gmmed8 Gmmed9 Gmmed10 Gmmed11 Gmmed12 Gmmed13 Gmmed14
Gmmed15 Gmmed16 hmatc7 hmatc8 hmatc9 hmatc10 hmatc11 hmatc12 hmatc13 hmatc14
hmatc15 hmatc16 hmatc17 hmatc18 hmatc19 hmatc20
        hmmed7 hmmed8 hmmed9 hmmed10 hmmed11 hmmed12 hmmed13 hmmed14
hmmed15 hmmed16 hmmed17 hmmed18 hmmed19 hmmed20
        imatc7 imatc8 imatc9 imatc10 imatc11 imatc12 imatc13 imatc14 imatc15 imatc16
imatc17 imatc18 imatc19 imatc20 imatc21 imatc22 imatc23 imatc24
        immed7 immed8 immed9 immed10 immed11 immed12 immed13 immed14 immed15
immed16 immed17 immed18 immed19 immed20 immed21 immed22 immed23 immed24
        cmmed2 cmmed3 cmmed4 cmmed5 cmmed6 cresult ctcva01 cthart01 ctartve1
dhart01 dhart05 dhart10 dhart11 dhart12 dhart13 ddiabe01 ddiabe07 ddiabe09 ddiabe11 ddiabe12
dcva01 dartvei1 dartvei5 dartvei7 dhart15
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dhart15d dhart15c dhart15b dartve8b dartve8d dartve8c dartve8 dmed_ang dmed_ari dmed_diu dmed_ino dmed_hyp t4_dat dmvar13 dmatc1 dmatc2 dmatc3 dmatc4 dmatc5 dmatc6 dmmed1 dmmed2 dmmed3 dmmed4

dmmed5 dmmed6 dresult dtpcva01 dtphart1 dtpartv1 dtrcva01 dtrhart1 dtrartv1 ehart01 ehart05 ehart10 ehart11 ehart12 ehart13 ediabe01 ediabe07 ediabe09 ediabe11 ediabe12 ecva01 eartvei1 eartvei5 eartvei7 ehart15

ehart15d ehart15c ehart15b eartve8b eartve8d eartve8c eartve8 egap egapy egaps egarrth egarrty egarrths egcva egcvay egcvas egartvei egartvey egartves egmi egmiy egmis egchf egchfy egchfs emed_ang emed_ari

emed_diu emed_ino emed_hyp t5_dat emvar13 ematc1 ematc2 ematc3 ematc4 ematc5 ematc6 emmed1 emmed2 emmed3 emmed4 emmed5 emmed6 eresult etpcva01 etphart1 etpartv1 etrcva01 etrhart1 etrartv1 fhart01

t6_dat fhart05 fhart10 fhart11 fhart12 fhart13 fdiabe01 fdiabe07 fdiabe09 fdiabe11 fdiabe12 fcva01 fartvei1 fartvei5 fartvei7 fhart15 fhart15d fhart15c fhart15b fartve8b fartve8d fartve8c fartve8 fgap fgapy fgaps fgarrth fgarrthy fgarrths fgcva fgcvay fgcvas fgartvei fgartvey

fgartves fgmi fgmiy fgmis fgchf fgchfy fgchfs fmed_ang fmed_ari fmed_diu fmed_ino fmed_hyp t6_dat fmvar13 fmatc1 fmatc2 fmatc3 fmatc4 fmatc5 fmatc6 fmmed1 fmmed2 fmmed3 fmmed4 fmmed5 fmmed6

fresult ftpcva01 ftphart1 ftpartv1 ftrcva01 ftrhart1 ftrartv1 t7_dat ghart01 ghart05 ghart10 ghart11 ghart12 ghart13 gdiabe01 gdiabe07 gdiabe09 gdiabe11 gdiabe12 gcva01 gartvei1 gartvei5 gartvei7 ghart15 ghart15d ghart15c

ghart15b gartve8b gartve8d gartve8c gartve8 gmed_ang gmed_ari gmed_diu gmed_ino gmed_hyp t7_dat gmvar13 gmatc1 gmatc2 gmatc3 gmatc4 gmatc5 gmatc6 gmmed1 gmmed2 gmmed3 gmmed4 gmmed5 gmmed6

gresult gtpcva01 gtphart1 gtpartv1 gtrcva01 gtrhart1 gtrartv1 hgap hgapy hgaps hgarrth hgarrthy hgarrths hgcva hgcvay hgcvas hgartvei hgartvey

hgartves hgmi hgmiy hgmis hgchf hgchfy hgchfs t8_dat hhart01 hhart05 hhart10 hhart11 hhart12 hhart13 hdiabe01 hdiabe07 hdiabe09 hdiabe11 hdiabe12 hcva01 hartvei1 hartvei5 hartvei7 hhart15 hhart15d hhart15c

hhart15b hartve8b hartve8d hartve8c hartve8 hmed_ang hmed_ari hmed_diu hmed_ino hmed_hyp t8_dat hmvar13 hmatc1 hmatc2 hmatc3 hmatc4 hmatc5 hmatc6 hmmed1 hmmed2 hmmed3 hmmed4 hmmed5 hmmed6

hresult htpcva01 htphart1 htpartv1 htrcva01 htrhart1 htrartv1 t9_dat ihart01 ihart05 ihart10 ihart11 ihart12 ihart13 idiabe01 idiabe07 idiabe09 idiabe11 idiabe12 icva01 iartvei1 iartvei5 iartvei7 ihart15 ihart15d ihart15c

ihart15b iartve8b iartve8d iartve8c iartve8 imed_ang imed_ari imed_diu imed_ino imed_hyp t9_dat imvar13 imatc1 imatc2 imatc3 imatc4 imatc5 imatc6 immed1 immed2 immed3 immed4 immed5 immed6

iresult itpcva01 itphart1 itpartv1 itrcva01 itrhart1 itrartv1.

FILTER OFF.
USE ALL.
SELECT IF (cohort = 1 & bresult=5).
EXECUTE.

*in the EG01 datafile (gp questionnaire), the variable egarrths (=diagnosis of arrythmia by specialist) is not coded correctly.
RECODE egarrths (3=1).
EXECUTE.

SAVE OUTFILE='*your directory here*\LASAZH01_workingfile.sav'

/COMPRESSED.

*-----------------------------------missing values.
*some cases are missing because they do not exist in original LASA files.
*assign value -9 to these cases.
RECODE bhart01 bhart05 bhart10 bhart11 bhart12 bhart13 bhart15 bhart15b bhart15c bhart15d bdiabe01 bdiabe07 bdiabe09 bdiabe11 bdiabe12 bcva01 bartvei1 bartvei5 bartvei7 bartvei8 bartve8b bartve8c

        bartve8d cgap cgapy cgaps cgarrth cgarrty cgarrths cgcva cgcvay cgcvas cgartvei cgartvey cgartves cgmi cgmiy cgmis cgchf cgchfy cgchfs bmed_ang bmed_ari bmed_diu bmed_ino bmed_hyp bgcva bgcvay bgclan

        bgclany bmvar13 chart01 chart05 chart10 chart11 chart12 chart13 cdiabe01 cdiabe07 cdiabe09 cdiabe11 cdiabe12 ccva01 cartvei1 cmvar13

        cartvei5 cartvei7 chart15 chart15d chart15c chart15b cartve8b cartve8d cartve8c cartve8 cmed_ang cmed_ari cmed_diu cmed_ino cmed_hyp

        cresult ctcva01 cthart01 ctartve1 dhart01 dhart05 dhart10 dhart11 dhart12 dhart13 ddiabe01 ddiabe07 ddiabe09 ddiabe11 ddiabe12 dcva01 dartvei1 dartvei5 dartvei7 dhart15

        dhart15d dhart15c dhart15b dartve8b dartve8d dartve8c dartve8 dmed_ang dmed_ari dmed_diu dmed_ino dmed_hyp dmvar13

        dresult dtpcva01 dtphart1 dtpartv1 dtrcva01 dtrhart1 dtrartv1 ehart01 ehart05 ehart10 ehart11 ehart12 ehart13 ediabe01 ediabe07 ediabe09 ediabe11 ediabe12 ecva01 eartvei1 eartvei5 eartvei7 ehart15

        ehart15d ehart15c ehart15b eartve8b eartve8d eartve8c eartve8 egap egapy egaps egarrth egarrty egarrths egcva egcvay egcvas egartvei egartvey egartves egmi egmiy egmis egchf egchfy egchfs emed_ang emed_ari

        emvar13 eresult etpcva01 etphart1 etpartv1 etrcva01 etrhart1 etrartv1 fhart01 fhart05 fhart10 fhart11 fhart12 fhart13 fdiabe01 fdiabe07

        fdiabe09 fdiabe11 fdiabe12 fcva01 fartvei1 fartvei5 fartvei7 fhart15 fhart15d fhart15c fhart15b fartve8b fartve8d fartve8c fartve8 fgap fgapy fgaps fgarrth fgarrthy fgarrths fgcva fgcvay fgcvas fgartvei fgartvey

        fgartves fgmi fgmiy fgmis fgchf fgchfy fgchfs fmed_ang fmed_ari fmed_diu fmed_ino fmed_hyp fmvar13 fresult ftpcva01 ftphart1 ftpartv1 ftrcva01 ftrhart1 ftrartv1

        ghart01 ghart05 ghart10 ghart11 ghart12 ghart13 gdiabe01 gdiabe07 gdiabe09 gdiabe11 gdiabe12 gcva01 gartvei1 gartvei5 gartvei7 ghart15 ghart15d ghart15c ghart15b gartve8b gartve8d gartve8c gartve8 gmed_ang

        gmed_ari gmed_diu gmed_ino gmed_hyp gmvar13 gresult gtpcva01 gtphart1 gtpartv1 gtrcva01 gtrhart1 gtrartv1 hhart01 hhart05 hhart10 hhart11 hhart12 hhart13 hdiabe01 hdiabe07 hdiabe09 hdiabe11 hdiabe12 hcva01

        hartvei1 hartvei5 hartvei7 hhart15 hhart15d hhart15c hhart15b hartve8b hartve8d hartve8c hartve8 hmed_ang hmed_ari hmed_diu hmed_ino hmed_hyp hmvar13 hresult htpcva01 htphart1 htpartv1 htrcva01 htrhart1 htrartv1

        hgap hgapy hgaps hgarrth hgarrthy hgarrths hgcva hgcvay hgcvas hgartvei hgartvey hgartves hgmi hgmiy hgmis hgchf hgchfy hgchfs

        ihart01 ihart05 ihart10 ihart11 ihart12 ihart13 idiabe01 idiabe07 idiabe09 idiabe11 idiabe12 icva01 iartvei1 iartvei5 iartvei7 ihart15 ihart15d ihart15c ihart15b iartve8b iartve8d iartve8c iartve8 imed_ang imvar13

        imed_ari imed_diu imed_ino imed_hyp iresult itpcva01 itphart1 itpartv1 itrcva01 itrhart1 itrartv1 (MISSING=-9).
VALUE LABELS   bhart01 bhart05 bhart10 bhart11 bhart12 bhart13 bhart15 bhart15b bhart15c bhart15d bdiabe01 bdiabe07 bdiabe09 bdiabe11 bdiabe12 bcva01 bartvei1 bartvei5 bartvei7 bartvei8 bartve8b bartve8c

bartve8d cgap cgapy cgaps cgarrth cgarrty cgarrths cgcva cgcvay cgcvas cgartvei cgartvey cgartves cgmi cgmiy cgmis cgchf cgchfy cgchfs bmed_ang bmed_ari bmed_diu bmed_ino bmed_hyp bgcva bgcvay bgclan

bgclany bmvar13 chart01 chart05 chart10 chart11 chart12 chart13 cdiabe01 cdiabe07 cdiabe09 cdiabe11 cdiabe12 ccva01 cartvei1

cartvei5 cartvei7 chart15 chart15d chart15c chart15b cartve8b cartve8d cartve8c cartve8 cmed_ang cmed_ari cmed_diu cmed_ino cmed_hyp cmvar13

cresult ctcva01 cthart01 ctartve1 dhart01 dhart05 dhart10 dhart11 dhart12 dhart13 ddiabe01 ddiabe07 ddiabe09 ddiabe11 ddiabe12 dcva01 dartvei1 dartvei5 dartvei7 dhart15

dhart15d dhart15c dhart15b dartve8b dartve8d dartve8c dartve8 dmed_ang dmed_ari dmed_diu dmed_ino dmed_hyp dmvar13

dresult dtpcva01 dtphart1 dtpartv1 dtrcva01 dtrhart1 dtrartv1 ehart01 ehart05 ehart10 ehart11 ehart12 ehart13 ediabe01 ediabe07 ediabe09 ediabe11 ediabe12 ecva01 eartvei1 eartvei5 eartvei7 ehart15

ehart15d ehart15c ehart15b eartve8b eartve8d eartve8c eartve8 egap egapy egaps egarrth egarrty egarrths egcva egcvay egcvas egartvei egartvey egartves egmi egmiy egmis egchf egchfy egchfs emed_ang emed_ari

emvar13 eresult etpcva01 etphart1 etpartv1 etrcva01 etrhart1 etrartv1 fhart01 fhart05 fhart10 fhart11 fhart12 fhart13 fdiabe01 fdiabe07

fdiabe09 fdiabe11 fdiabe12 fcva01 fartvei1 fartvei5 fartvei7 fhart15 fhart15d fhart15c fhart15b fartve8b fartve8d fartve8c fartve8 fgap fgapy fgaps fgarrth fgarrthy fgarrths fgcva fgcvay fgcvas fgartvei fgartvey

fgartves fgmi fgmiy fgmis fgchf fgchfy fgchfs fmed_ang fmed_ari fmed_diu fmed_ino fmed_hyp fmvar13 fresult ftpcva01 ftphart1 ftpartv1 ftrcva01 ftrhart1 ftrartv1

ghart01 ghart05 ghart10 ghart11 ghart12 ghart13 gdiabe01 gdiabe07 gdiabe09 gdiabe11 gdiabe12 gcva01 gartvei1 gartvei5 gartvei7 ghart15 ghart15d ghart15c ghart15b gartve8b gartve8d gartve8c gartve8 gmed_ang

gmed_ari gmed_diu gmed_ino gmed_hyp gmvar13 gresult gtpcva01 gtphart1 gtpartv1 gtrcva01 gtrhart1 gtrartv1 hhart01 hhart05 hhart10 hhart11 hhart12 hhart13 hdiabe01 hdiabe07 hdiabe09 hdiabe11 hdiabe12 hcva01

hartvei1 hartvei5 hartvei7 hhart15 hhart15d hhart15c hhart15b hartve8b hartve8d hartve8c hartve8 hmed_ang hmed_ari hmed_diu hmed_ino hmed_hyp hmvar13 hresult htpcva01 htphart1 htpartv1 htrcva01 htrhart1 htrartv1

hgap hgapy hgaps hgarrth hgarrthy hgarrths hgcva hgcvay hgcvas hgartvei hgartvey hgartves hgmi hgmiy hgmis hgchf hgchfy hgchfs

ihart01 ihart05 ihart10 ihart11 ihart12 ihart13 idiabe01 idiabe07 idiabe09 idiabe11 idiabe12 icva01 iartvei1 iartvei5 iartvei7 ihart15 ihart15d ihart15c ihart15b iartve8b iartve8d iartve8c iartve8 imed_ang

imed_ari imed_diu imed_ino imed_hyp iresult itpcva01 itphart1 itpartv1 itrcva01 itrhart1 itrartv1 imvar13

-9 'missing, case was missing in original LASA files'.
EXECUTE.
*********************B WAVE****************.
*bmed_ino.
*FOROSEMIDUM   was coded as C01AA05 and should be   C03CA01.
If (bmatc1='C01AA05' and bmmed1='FOROSEMIDUM') bmatc1='C03CA01' .
If (bmatc2='C01AA05' and bmmed2='FOROSEMIDUM') bmatc2='C03CA01' .
If (bmatc3='C01AA05' and bmmed3='FOROSEMIDUM') bmatc3='C03CA01' .
If (bmatc4='C01AA05' and bmmed4='FOROSEMIDUM') bmatc4='C03CA01' .
If (bmatc5='C01AA05' and bmmed5='FOROSEMIDUM') bmatc5='C03CA01' .
If (bmatc6='C01AA05' and bmmed6='FOROSEMIDUM') bmatc6='C03CA01' .
EXECUTE.

*bmed_ari: no errors.
*med_ang: no errors.

*med_diu: C03.
*HYDROCHLORTHIAZIDUM COMP   C02LA01 -->   C03AA03 .
If (bmatc1='C02LA01') bmatc1='C03AA03' .
If (bmatc2='C02LA01') bmatc2='C03AA03' .
If (bmatc3='C02LA01') bmatc3='C03AA03' .
If (bmatc4='C02LA01') bmatc4='C03AA03' .
If (bmatc5='C02LA01') bmatc5='C03AA03' .
If (bmatc6='C02LA01') bmatc6='C03AA03' .
EXECUTE.
*FUROSEMIDUM   C02CA01   --> C03CA01.
If (bmatc1='C02CA01' and bmmed1='FUROSEMIDUM') bmatc1='C03CA01' .
If (bmatc2='C02CA01' and bmmed2='FUROSEMIDUM') bmatc2='C03CA01' .
If (bmatc3='C02CA01' and bmmed3='FUROSEMIDUM') bmatc3='C03CA01' .
If (bmatc4='C02CA01' and bmmed4='FUROSEMIDUM') bmatc4='C03CA01' .
If (bmatc5='C02CA01' and bmmed5='FUROSEMIDUM') bmatc5='C03CA01' .
If (bmatc6='C02CA01' and bmmed6='FUROSEMIDUM') bmatc6='C03CA01' .
EXECUTE.

*med_hyp: C02 C07 C08 C09.
*C02.
* remaining medication coded as C02 but should not be C02.
*TRANDATE   C02CB01   --> C07AG01.
If (bmatc1='C02CB01') bmatc1='C07AG02' .
If (bmatc2='C02CB01') bmatc2='C07AG02' .
If (bmatc3='C02CB01') bmatc3='C07AG02' .
If (bmatc4='C02CB01') bmatc4='C07AG02' .
If (bmatc5='C02CB01') bmatc5='C07AG02' .
If (bmatc6='C02CB01') bmatc6='C07AG02' .

*NORVASC   C02DE12   --> C08CA01.
If (bmatc1='C02DE12') bmatc1='C08CA01' .
If (bmatc2='C02DE12') bmatc2='C08CA01' .
If (bmatc3='C02DE12') bmatc3='C08CA01' .
If (bmatc4='C02DE12') bmatc4='C08CA01' .
If (bmatc5='C02DE12') bmatc5='C08CA01' .
If (bmatc6='C02DE12') bmatc6='C08CA01' .

*PLENDIL   C02DE10   --> C08CA02.
If (bmatc1='C02DE10') bmatc1='C08CA02' .
If (bmatc2='C02DE10') bmatc2='C08CA02' .
If (bmatc3='C02DE10') bmatc3='C08CA02' .
If (bmatc4='C02DE10') bmatc4='C08CA02' .
If (bmatc5='C02DE10') bmatc5='C08CA02' .
If (bmatc6='C02DE10') bmatc6='C08CA02' .

*LOMIR   C02DE13   --> C08CA03.
If (bmatc1='C02DE13') bmatc1='C08CA03' .
If (bmatc2='C02DE13') bmatc2='C08CA03' .

If (bmatc3='C02DE13') bmatc3='C08CA03' .
If (bmatc4='C02DE13') bmatc4='C08CA03' .
If (bmatc5='C02DE13') bmatc5='C08CA03' .
If (bmatc6='C02DE13') bmatc6='C08CA03' .

*CARDENE   C02DE09   --> C08CA04.
If (bmatc1='C02DE09') bmatc1='C08CA04' .
If (bmatc2='C02DE09') bmatc2='C08CA04' .
If (bmatc3='C02DE09') bmatc3='C08CA04' .
If (bmatc4='C02DE09') bmatc4='C08CA04' .
If (bmatc5='C02DE09') bmatc5='C08CA04' .
If (bmatc6='C02DE09') bmatc6='C08CA04' .

*ADALAT, ADALAT RETARD, NIFEDIPINE, NIFEDIPINE DUMEX, NIFEDIPINE PHARBITA, NIFEDIPINUM
                C02DE02   --> C08CA05 .
If (bmatc1='C02DE02') bmatc1='C08CA05' .
If (bmatc2='C02DE02') bmatc2='C08CA05' .
If (bmatc3='C02DE02') bmatc3='C08CA05' .
If (bmatc4='C02DE02') bmatc4='C08CA05' .
If (bmatc5='C02DE02') bmatc5='C08CA05' .
If (bmatc6='C02DE02') bmatc6='C08CA05' .

*SYSCOR   C02DE14   --> C08CA07.
If (bmatc1='C02DE14') bmatc1='C08CA07' .
If (bmatc2='C02DE14') bmatc2='C08CA07' .
If (bmatc3='C02DE14') bmatc3='C08CA07' .
If (bmatc4='C02DE14') bmatc4='C08CA07' .
If (bmatc5='C02DE14') bmatc5='C08CA07' .
If (bmatc6='C02DE14') bmatc6='C08CA07' .

*BAYPRESS   C02DE05   --> C08CA08.
If (bmatc1='C02DE05') bmatc1='C08CA08' .
If (bmatc2='C02DE05') bmatc2='C08CA08' .
If (bmatc3='C02DE05') bmatc3='C08CA08' .
If (bmatc4='C02DE05') bmatc4='C08CA08' .
If (bmatc5='C02DE05') bmatc5='C08CA08' .
If (bmatc6='C02DE05') bmatc6='C08CA08' .

*ISOPTINE, VERAPAMIL C02DE01   --> C08DA01.
If (bmatc1='C02DE01') bmatc1='C08DA01' .
If (bmatc2='C02DE01') bmatc2='C08DA01' .
If (bmatc3='C02DE01') bmatc3='C08DA01' .
If (bmatc4='C02DE01') bmatc4='C08DA01' .
If (bmatc5='C02DE01') bmatc5='C08DA01' .
If (bmatc6='C02DE01') bmatc6='C08DA01' .

*DILTIAZEM, TILDIEM, TILDIEM CR   C02DE04   --> C08DB01.
If (bmatc1='C02DE04') bmatc1='C08DB01' .
If (bmatc2='C02DE04') bmatc2='C08DB01' .
If (bmatc3='C02DE04') bmatc3='C08DB01' .
If (bmatc4='C02DE04') bmatc4='C08DB01' .
If (bmatc5='C02DE04') bmatc5='C08DB01' .

If (bmatc6='C02DE04') bmatc6='C08DB01' .

*CAPOTEN   C02EA01   --> C09AA01.
If (bmatc1='C02EA01') bmatc1='C09AA01' .
If (bmatc2='C02EA01') bmatc2='C09AA01' .
If (bmatc3='C02EA01') bmatc3='C09AA01' .
If (bmatc4='C02EA01') bmatc4='C09AA01' .
If (bmatc5='C02EA01') bmatc5='C09AA01' .
If (bmatc6='C02EA01') bmatc6='C09AA01' .

*RENITEC   C02EA02   --> C09AA02.
If (bmatc1='C02EA02') bmatc1='C09AA02' .
If (bmatc2='C02EA02') bmatc2='C09AA02' .
If (bmatc3='C02EA02') bmatc3='C09AA02' .
If (bmatc4='C02EA02') bmatc4='C09AA02' .
If (bmatc5='C02EA02') bmatc5='C09AA02' .
If (bmatc6='C02EA02') bmatc6='C09AA02' .

*NOVATEC, ZESTRIL   C02EA03   --> C09AA03 .
If (bmatc1='C02EA03') bmatc1='C09AA03' .
If (bmatc2='C02EA03') bmatc2='C09AA03' .
If (bmatc3='C02EA03') bmatc3='C09AA03' .
If (bmatc4='C02EA03') bmatc4='C09AA03' .
If (bmatc5='C02EA03') bmatc5='C09AA03' .
If (bmatc6='C02EA03') bmatc6='C09AA03' .

*COVERSYL   C02EA04   --> C09AA04 .
If (bmatc1='C02EA04') bmatc1='C09AA04' .
If (bmatc2='C02EA04') bmatc2='C09AA04' .
If (bmatc3='C02EA04') bmatc3='C09AA04' .
If (bmatc4='C02EA04') bmatc4='C09AA04' .
If (bmatc5='C02EA04') bmatc5='C09AA04' .
If (bmatc6='C02EA04') bmatc6='C09AA04' .

*ACUPRIL   C02EA06   --> C09AA06 .
If (bmatc1='C02EA06') bmatc1='C09AA06' .
If (bmatc2='C02EA06') bmatc2='C09AA06' .
If (bmatc3='C02EA06') bmatc3='C09AA06' .
If (bmatc4='C02EA06') bmatc4='C09AA06' .
If (bmatc5='C02EA06') bmatc5='C09AA06' .
If (bmatc6='C02EA06') bmatc6='C09AA06' .

*ACEPLUS   C02LM01 -->   N02BE51   NSAID? Paracetamol & Caffeine.
If (bmatc1='C02LM01' and bmmed1='ACEPLUS') bmatc1='N02BE51' .
If (bmatc2='C02LM01' and bmmed2='ACEPLUS') bmatc2='N02BE51' .
If (bmatc3='C02LM01' and bmmed3='ACEPLUS') bmatc3='N02BE51' .
If (bmatc4='C02LM01' and bmmed4='ACEPLUS') bmatc4='N02BE51' .
If (bmatc5='C02LM01' and bmmed5='ACEPLUS') bmatc5='N02BE51' .
If (bmatc6='C02LM01' and bmmed6='ACEPLUS') bmatc6='N02BE51' .

*CAPOZIDE   C02LM01   --> C09BA01.
If (bmatc1='C02LM01') bmatc1='C09BA01' .

```
If (bmatc2='C02LM01') bmatc2='C09BA01' .
If (bmatc3='C02LM01') bmatc3='C09BA01' .
If (bmatc4='C02LM01') bmatc4='C09BA01' .
If (bmatc5='C02LM01') bmatc5='C09BA01' .
If (bmatc6='C02LM01') bmatc6='C09BA01' .

*CO-RENITEC   C02LM02       --> C09BA02.
If (bmatc1='C02LM02') bmatc1='C09BA02' .
If (bmatc2='C02LM02') bmatc2='C09BA02' .
If (bmatc3='C02LM02') bmatc3='C09BA02' .
If (bmatc4='C02LM02') bmatc4='C09BA02' .
If (bmatc5='C02LM02') bmatc5='C09BA02' .
If (bmatc6='C02LM02') bmatc6='C09BA02' .

*ZESTORETIC   C02LM03       --> C09BA03.
If (bmatc1='C02LM03') bmatc1='C09BA03' .
If (bmatc2='C02LM03') bmatc2='C09BA03' .
If (bmatc3='C02LM03') bmatc3='C09BA03' .
If (bmatc4='C02LM03') bmatc4='C09BA03' .
If (bmatc5='C02LM03') bmatc5='C09BA03' .
If (bmatc6='C02LM03') bmatc6='C09BA03' .
EXECUTE.

*C07.
*CHANGED UNDER C02.

*C08.
*CHANGED UNDER C02.

*C09.
*CHANGED UNDER C02.

*create a string variable that consists of the first 3 characters of the ATC code.
string b_3ATC1(a30).
COMPUTE b_3ATC1 = CHAR.SUBSTR(bmatc1,1,3) .
string b_3ATC2(a30).
COMPUTE b_3ATC2 = CHAR.SUBSTR(bmatc2,1,3) .
string b_3ATC3(a30).
COMPUTE b_3ATC3 = CHAR.SUBSTR(bmatc3,1,3) .
string b_3ATC4(a30).
COMPUTE b_3ATC4 = CHAR.SUBSTR(bmatc4,1,3) .
string b_3ATC5(a30).
COMPUTE b_3ATC5 = CHAR.SUBSTR(bmatc5,1,3) .
string b_3ATC6(a30).
COMPUTE b_3ATC6 = CHAR.SUBSTR(bmatc6,1,3) .

*create a string variable that consists of the first 4 characters of the ATC code.
string b_4ATC1(a30).
COMPUTE b_4ATC1 = CHAR.SUBSTR(bmatc1,1,4) .
string b_4ATC2(a30).
COMPUTE b_4ATC2 = CHAR.SUBSTR(bmatc2,1,4) .
string b_4ATC3(a30).
```

```
COMPUTE b_4ATC3 = CHAR.SUBSTR(bmatc3,1,4) .
string b_4ATC4(a30).
COMPUTE b_4ATC4 = CHAR.SUBSTR(bmatc4,1,4) .
string b_4ATC5(a30).
COMPUTE b_4ATC5 = CHAR.SUBSTR(bmatc5,1,4) .
string b_4ATC6(a30).
COMPUTE b_4ATC6 = CHAR.SUBSTR(bmatc6,1,4) .

*create a string variable that consists of the first 5 characters of the ATC code.
string b_5ATC1(a30).
COMPUTE b_5ATC1 = CHAR.SUBSTR(bmatc1,1,5) .
string b_5ATC2(a30).
COMPUTE b_5ATC2 = CHAR.SUBSTR(bmatc2,1,5) .
string b_5ATC3(a30).
COMPUTE b_5ATC3 = CHAR.SUBSTR(bmatc3,1,5) .
string b_5ATC4(a30).
COMPUTE b_5ATC4 = CHAR.SUBSTR(bmatc4,1,5) .
string b_5ATC5(a30).
COMPUTE b_5ATC5 = CHAR.SUBSTR(bmatc5,1,5) .
string b_5ATC6(a30).
COMPUTE b_5ATC6 = CHAR.SUBSTR(bmatc6,1,5) .
EXECUTE.

*bmed_ino.
RECODE bmed_ino (ELSE=COPY) INTO bmed_ino_or.
VARIABLE LABELS  bmed_ino_or 'origineel'.
EXECUTE.
RECODE bmed_ino (ELSE=-3).
EXECUTE.
If (bmvar13 le -1) bmed_ino=-1.
If (bmvar13=2 or bmvar13=1) bmed_ino=0.
If (b_4ATC1='C01A' OR b_4ATC2='C01A' OR b_4ATC3='C01A' OR b_4ATC4='C01A' OR b_4ATC5='C01A'
OR b_4ATC6='C01A') bmed_ino=1.
If (b_4ATC1='C01C' OR b_4ATC2='C01C' OR b_4ATC3='C01C' OR b_4ATC4='C01C' OR b_4ATC5='C01C'
OR b_4ATC6='C01C') bmed_ino=1.
EXECUTE.

*bmed_ari no errors.
*med_ang: no errors.

*med_diu: C03.
RECODE bmed_diu (ELSE=COPY) INTO bmed_diu_or.
VARIABLE LABELS  bmed_diu_or 'origineel'.
EXECUTE.
RECODE bmed_diu (ELSE=-3).
EXECUTE.
If (bmvar13 le -1) bmed_diu=-1.
If (bmvar13=2 or bmvar13=1) bmed_diu=0.
If (b_4ATC1='C03' OR b_3ATC2='C03' OR b_3ATC3='C03' OR b_3ATC4='C03' OR b_3ATC5='C03' OR
b_3ATC6='C03') bmed_diu=1.
EXECUTE.
```

*some diuretics are combination preps and therefore (incorrectly) not included in the diuretics variable.
*C07B C07C C07D C02L C09BAA C09DAA C08G.

*C07B C07C C07D C02L C09BA C09DA C08G .
If (b_4ATC1='C07B' OR b_4ATC2='C07B' OR b_4ATC3='C07B' OR b_4ATC4='C07B' OR b_4ATC5='C07B' OR b_4ATC6='C07B') imed_diu=1.
If (b_4ATC1='C07C' OR b_4ATC2='C07C' OR b_4ATC3='C07C' OR b_4ATC4='C07C' OR b_4ATC5='C07C' OR b_4ATC6='C07C') imed_diu=1.
If (b_4ATC1='C07D' OR b_4ATC2='C07D' OR b_4ATC3='C07D' OR b_4ATC4='C07D' OR b_4ATC5='C07D' OR b_4ATC6='C07D') imed_diu=1.
If (b_4ATC1='C02L' OR b_4ATC2='C02L' OR b_4ATC3='C02L' OR b_4ATC4='C02L' OR b_4ATC5='C02L' OR b_4ATC6='C02L') imed_diu=1.
If (b_5ATC1='C09BA' OR b_5ATC2='C09BA' OR b_5ATC3='C09BA' OR b_5ATC4='C09BA' OR b_5ATC5='C09BA' OR b_5ATC6='C09BA') imed_diu=1.
If (b_5ATC1='C09DA' OR b_5ATC2='C09DA' OR b_5ATC3='C09DA' OR b_5ATC4='C09DA' OR b_5ATC5='C09DA' OR b_5ATC6='C09DA') imed_diu=1.
If (b_4ATC1='C08G' OR b_4ATC2='C08G' OR b_4ATC3='C08G' OR b_4ATC4='C08G' OR b_4ATC5='C08G' OR b_4ATC6='C08G') imed_diu=1.
EXECUTE.

*med_hyp: C02 C07 C08 C09.
RECODE bmed_hyp (ELSE=COPY) INTO bmed_hyp_or.
VARIABLE LABELS bmed_hyp_or 'origineel'.
EXECUTE.
RECODE bmed_hyp (ELSE=-3).
EXECUTE.
If (bmvar13 le -1) bmed_hyp=-1.
If (bmvar13=2 or bmvar13=1) bmed_hyp=0.
If (b_3ATC1='C02' OR b_3ATC2='C02' OR b_3ATC3='C02' OR b_3ATC4='C02' OR b_3ATC5='C02' OR b_3ATC6='C02') bmed_hyp=1.
If (b_3ATC1='C07' OR b_3ATC2='C07' OR b_3ATC3='C07' OR b_3ATC4='C07' OR b_3ATC5='C07' OR b_3ATC6='C07') bmed_hyp=1.
If (b_3ATC1='C08' OR b_3ATC2='C08' OR b_3ATC3='C08' OR b_3ATC4='C08' OR b_3ATC5='C08' OR b_3ATC6='C08') bmed_hyp=1.
If (b_3ATC1='C09' OR b_3ATC2='C09' OR b_3ATC3='C09' OR b_3ATC4='C09' OR b_3ATC5='C09' OR b_3ATC6='C09') bmed_hyp=1.
EXECUTE.

*create a variable: use of beta blocking agents (atc code C07, thus includes combination preparaten) yes/no.
compute bmed_beta=0.
If (bmvar13 le -1) bmed_beta=-1.
If (b_3ATC1='C07' OR b_3ATC2='C07' OR b_3ATC3='C07' OR b_3ATC4='C07' OR b_3ATC5='C07' OR b_3ATC6='C07') bmed_beta=1.
VARIABLE LABELS bmed_beta 'use of beta blocking agents'.
VALUE LABELS bmed_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

```
*create a variable: use of anticoagulant drugs (vitamine K antagonists, DOACs, dabigatran (atc codes
B01AA, B01AF, B01AE)) yes/no.
compute bmed_stolling=0.
If (bmvar13 le -1) bmed_stolling=-1.
If (b_5ATC1='B01AA' OR b_5ATC2='B01AA' OR b_5ATC3='B01AA' OR b_5ATC4='B01AA' OR
b_5ATC5='B01AA' OR b_5ATC6='B01AA') bmed_stolling=1.
If (b_5ATC1='B01AF' OR b_5ATC2='B01AF' OR b_5ATC3='B01AF' OR b_5ATC4='B01AF' OR
b_5ATC5='B01AF' OR b_5ATC6='B01AF') bmed_stolling=1.
If (b_5ATC1='B01AE' OR b_5ATC2='B01AE' OR b_5ATC3='B01AE' OR b_5ATC4='B01AE' OR
b_5ATC5='B01AE' OR b_5ATC6='B01AE') bmed_stolling=1.
VARIABLE LABELS bmed_stolling 'use of anticoagulants'.
VALUE LABELS   bmed_stolling
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.


*combining anticoagulants and betablocking agents: use of both, yes/no.
compute bmed_stol_beta=-3.
If (bmed_stolling=-1) bmed_stol_beta=-1.
If (bmed_stolling=1 and bmed_beta=1) bmed_stol_beta=1.
If (bmed_stolling=0 or bmed_beta=0) bmed_stol_beta=0.
VARIABLE LABELS bmed_stol_beta 'use of both beta blocking agent AND anticoagulantia'.
VALUE LABELS   bmed_stol_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*med_ino: C01A en C01C.
*med_ari: C01B.
*med_ang: C01D.
*med_diu: C03.
*med_hyp: C02 C07 C08 C09.



********************year of interview (1992 or 1993).
COMPUTE t2_YEAR=XDATE.YEAR(t2_dat).
VARIABLE LABELS t2_YEAR "LASA main interview year (w2)".
VARIABLE LEVEL t2_YEAR(SCALE).
FORMATS t2_YEAR(F8.0).
VARIABLE WIDTH t2_YEAR(8).
EXECUTE.

********************ARRHYTHMIA (ARI) at B********************.
*Selfreport surgery implantation of pacemaker.
COMPUTE b_surARI=-3.
IF (bhart01 le -1) b_surARI=-1.
IF (bhart15d le -1) b_surARI=-1.
IF (bhart15 le -1) b_surARI=-1.
IF (bhart01=0) b_surARI=0.
```

IF (bhart15=0) b_surARI=0.
IF (bhart15d=0) b_surARI=0.
IF (bhart15d=1) b_surARI=1.
VARIABLE LABELS b_surARI 'self report surgery: pacemaker'.
VALUE LABELS b_surARI
         -1 'missing'
         0 'no'
         1 'yes'.

*use of anti arrythmic medication.
RECODE bmed_ARI (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO b_mARI.
IF (bmed_ino=1) b_mARI=1.
IF (bmvar13=0) b_mARI=0.
IF (bmvar13 le -1) b_mARI=-1.
VARIABLE LABELS b_mARI 'use of antiarrhythmics'.
VALUE LABELS b_mARI
         -1 'missing'
         0 'no'
         1 'yes'.

*GP diagnosis of ARI.
COMPUTE b_gpARI=-3.
IF (cgarrth le -1) b_gpARI=-1.
IF (cgarrth=1 and cgarrty le -1) b_gpARI=2.
IF (cgarrth=0) b_gpARI=0.
IF (cgarrth=1 and cgarrty ge 4) b_gpARI=0.
IF (cgarrth=1 and cgarrty=3 and t2_year=1992) b_gpARI=0.
IF (cgarrth=1 and (cgarrty=1 OR cgarrty=2)) b_gpARI=1.
IF (cgarrth=1 and (cgarrty=3 and t2_YEAR=1993)) b_gpARI=1.
If (b_gpARI=-1 AND egarrth=0) b_gpARI=0.
If (b_gpARI=-1 AND egarrth=1 AND egarrty ge 2) b_gpARI=0.
If (b_gpARI=-1 AND egarrth=1 AND egarrty le 1) b_gpARI=2.
If (b_gpARI=-1 AND fgarrth=0) b_gpARI=0.
If (b_gpARI=-1 AND fgarrth=1 AND fgarrthy ge 2) b_gpARI=0.
If (b_gpARI=-1 AND fgarrth=1 AND fgarrthy le 1) b_gpARI=2.
If (b_gpARI=-1 AND hgarrth=0) b_gpARI=0.
If (b_gpARI=-1 AND hgarrth=1 AND hgarrthy ge 2) b_gpARI=0.
If (b_gpARI=-1 AND hgarrth=1 AND hgarrthy le 1) b_gpARI=2.
VARIABLE LABELS b_gpARI 'gp diagnosis: cardiac arrhythmia'.
VALUE LABELS b_gpARI
         -1 'missing'
         0 'no'
         1 'yes'
         2 'diagnose = yes, but year = missing'.

*ARI algorithm: medication, GP diagnosis and SR implantation of pacemaker combined.
compute b_ARI=-3.
IF (b_mARI=1) b_ARI=1.
IF (b_mARI=0 and b_gpARI=1 and (bmed_stol_beta=1)) b_ARI=1.
IF (b_mARI=0 and b_gpARI=1 and (bmed_stol_beta=0) and cgarrths=1) b_ARI=1.
IF (b_mARI=0 and b_gpARI=1 and (bmed_stol_beta=0) and cgarrths le 0 and b_surARI=1) b_ARI=1.
IF (b_mARI=0 and b_gpARI=1 and (bmed_stol_beta=0) and cgarrths le 0 and b_surARI le 0) b_ARI=2.

IF (b_mARI=0 and b_gpARI=0 and b_surARI=1) b_ARI=3.
IF (b_mARI=0 and b_gpARI=0 and b_surARI le 0) b_ARI=0.
IF (b_mARI=0 and b_gpARI=2 and (bmed_stol_beta=1)) b_ARI=1.
IF (b_mARI=0 and b_gpARI=2 and (bmed_stol_beta=0) and b_surARI=1) b_ARI=1.
IF (b_mARI=0 and b_gpARI=2 and (bmed_stol_beta=0) and b_surARI le 0) b_ARI=0.
IF (b_mARI=0 and b_gpARI=2 and (bmed_stol_beta=0) and b_surARI le -1) b_ARI=0.
IF (b_mARI=0 and b_gpARI=-1 and b_surARI=1) b_ARI=2.
IF (b_mARI=0 and b_gpARI=-1 and (bmed_stol_beta=0) and b_surARI=0) b_ARI=0.
IF (b_mARI=0 and b_gpARI=-1 and (bmed_stol_beta=0) and b_surARI le -1) b_ARI=-1.
IF (b_mARI=0 and b_gpARI=-1 and (bmed_stol_beta=1) and b_surARI le 0) b_ARI=-1.
IF (b_mARI le -1 and b_gpARI=1 and cgarrths=1) b_ARI=1.
IF (b_mARI le -1 and b_gpARI=1 and cgarrths le 0 and b_surARI=1) b_ARI=1.
IF (b_mARI le -1 and b_gpARI=1 and cgarrths le 0 and b_surARI le 0) b_ARI=2.
IF (b_mARI le -1 and b_gpARI=0 and b_surARI=1) b_ARI=3.
IF (b_mARI le -1 and b_gpARI=0 and b_surARI le 0) b_ARI=0.
IF (b_mARI le -1 and b_gpARI=2 and b_surARI=1) b_ARI=1.
IF (b_mARI le -1 and b_gpARI=2 and b_surARI le 0) b_ARI=-1.
IF (b_mARI le -1 and b_gpARI le -1 and b_surARI=1) b_ARI=2.
IF (b_mARI le -1 and b_gpARI le -1 and b_surARI le 0) b_ARI=-1.
VARIABLE LABELS b_ARI 'B wave: arrythmia'.
VALUE LABELS b_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CEREBROVASCULAR ACCIDENT (CVA) at B********************.
*Selfreport diagnosis of CVA.
COMPUTE b_srCVA=-3.
IF (bcva01 le -1) b_srCVA=-1.
IF (bcva01=0) b_srCVA=0.
IF (bcva01=1) b_srCVA=1.
VARIABLE LABELS b_srCVA 'self report: CVA'.
VALUE LABELS b_srCVA
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CVA.
*GP diagnosis according to GP questionnaire of 1994.
COMPUTE cva1994=-3.
IF (bgcva le -1) cva1994=-2.
IF (bgcva=1 and bgcvay le -1) cva1994=-1.
IF (bgcva=0) cva1994=0.
IF (bgcva=1 and bgcvay=93 and t2_year=1992) cva1994=0.
IF (bgcva=1 and bgcvay ge 58 and bgcvay le 92) cva1994=1.
IF (bgcva=1 and (bgcvay=93 and t2_YEAR=1993)) cva1994=1.
VARIABLE LABELS cva1994 'gp diagnosis: CVA according to questionaire 1992/1993'.
VALUE LABELS cva1994
        -2 'missing'
        -1 'diagnose = yes, but year = missing'

0 'no'
                1 'yes'.

*GP diagnosis according to GP questionnaire of 2000.
COMPUTE cva2000=-3.
IF (cgcva le -1) cva2000=-2.
IF (cgcva=1 and cgcvay le -1) cva2000=-1.
IF (cgcva=0) cva2000=0.
IF (cgcva=1 and cgcvay=3 and t2_year=1992) cva2000=0.
IF (cgcva=1 and cgcvay ge 4) cva2000=0.
IF (cgcva=1 and (cgcvay=1 OR cgcvay=2)) cva2000=1.
IF (cgcva=1 and (cgcvay=3 and t2_YEAR=1993)) cva2000=1.
VARIABLE LABELS cva2000 'gp diagnosis: CVA according to questionaire 2000'.
VALUE LABELS cva2000
                -2 'missing'
                -1 'diagnose = yes, but year = missing'
                0 'no'
                1 'yes'.

*cva1994 and cva2000 combined.
COMPUTE b_gpCVA=-3.
IF (cva1994 le -2 and cva2000 le -2) b_gpCVA=-1.
IF (cva1994=0 and cva2000=0) b_gpCVA=0.
IF (cva1994=0 and cva2000 le -1) b_gpCVA=0.
IF (cva1994 le -2 and cva2000=0) b_gpCVA=0.
IF (cva1994 le -2 and cva2000=-1) b_gpCVA=2.
IF (cva1994=1 or cva1994=-1 or cva2000=1) b_gpCVA=1.
If (b_gpCVA=-1 AND egcva=0) b_gpCVA=0.
If (b_gpCVA=-1 AND egcva=1 AND egcvay ge 2) b_gpCVA=0.
If (b_gpCVA=-1 AND egcva=1 AND egcvay le 1) b_gpCVA=2.
If (b_gpCVA=-1 AND fgcva=0) b_gpCVA=0.
If (b_gpCVA=-1 AND fgcva=1 AND fgcvay ge 2) b_gpCVA=0.
If (b_gpCVA=-1 AND fgcva=1 AND fgcvay le 1) b_gpCVA=2.
If (b_gpCVA=-1 AND hgcva=0) b_gpCVA=0.
If (b_gpCVA=-1 AND hgcva=1 AND hgcvay ge 2) b_gpCVA=0.
If (b_gpCVA=-1 AND hgcva=1 AND hgcvay le 1) b_gpCVA=2.
VARIABLE LABELS b_gpCVA 'gp diagnosis: CVA'.
VALUE LABELS b_gpCVA
                -1 'missing'
                0 'no'
                1 'yes'
                2 'diagnose = yes, but year = missing'.

*CVA algorithm: GP diagnosis and SR combined.
COMPUTE b_CVA=-3.
IF (b_gpCVA=1 and cgcvas=1) b_CVA=1.
IF (b_gpCVA=1 and cgcvas le 0 and b_srCVA=1) b_CVA=1.
IF (b_gpCVA=1 and cgcvas le 0 and b_srCVA=0) b_CVA=3.
IF (b_gpCVA=1 and cgcvas le 0 and b_srCVA le -1) b_CVA=2.
IF (b_gpCVA=0 and b_srCVA=1) b_CVA=3.
IF (b_gpCVA=0 and b_srCVA=0) b_CVA=0.
IF (b_gpCVA=0 and b_srCVA le -1) b_CVA=0.

IF (b_gpCVA=2 and b_srCVA=1) b_CVA=1.
IF (b_gpCVA=2 and b_srCVA=0) b_CVA=0.
IF (b_gpCVA=2 and b_srCVA le -1) b_CVA=-1.
IF (b_gpCVA le -1 and b_srCVA=1) b_CVA=2.
IF (b_gpCVA le -1 and b_srCVA=0) b_CVA=0.
IF (b_gpCVA le -1 and b_srCVA le -1) b_CVA=-1.
VARIABLE LABELS b_CVA 'B wave: cerebrovascular accident'.
VALUE LABELS b_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

********************MYOCARDIAL INFARCTION (MI) at B********************.
*Selfreport diagnosis of MI.
COMPUTE b_srMI=-5.
IF (bhart01 le -1) b_srMI=-1.
IF (bhart05 le -1 and bhart01=1) b_srMI=-1.
IF (bhart01=0) b_srMI=0.
IF (bhart05=0) b_srMI=0.
IF (bhart05=1) b_srMI=1.
VARIABLE LABELS b_srMI 'self report: myocardial infarction'.
VALUE LABELS b_srMI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of MI.
COMPUTE b_gpMI=-3.
IF (cgmi le -1) b_gpMI=-1.
IF (cgmi=1 and cgmiy le -1) b_gpMI=2.
IF (cgmi=0) b_gpMI=0.
IF (cgmi=1 and cgmiy ge 4) b_gpMI=0.
IF (cgmi=1 and cgmiy=3 and t2_year=1992) b_gpMI=0.
IF (cgmi=1 and (cgmiy=1 OR cgmiy=2)) b_gpMI=1.
IF (cgmi=1 and (cgmiy=3 and t2_YEAR=1993)) b_gpMI=1.
If (b_gpmi=-1 AND egmi=0) b_gpmi=0.
If (b_gpmi=-1 AND egmi=1 AND egmiy ge 2) b_gpmi=0.
If (b_gpmi=-1 AND egmi=1 AND egmiy le 1) b_gpmi=2.
If (b_gpmi=-1 AND fgmi=0) b_gpmi=0.
If (b_gpmi=-1 AND fgmi=1 AND fgmiy ge 2) b_gpmi=0.
If (b_gpmi=-1 AND fgmi=1 AND fgmiy le 1) b_gpmi=2.
If (b_gpmi=-1 AND hgmi=0) b_gpmi=0.
If (b_gpmi=-1 AND hgmi=1 AND hgmiy ge 2) b_gpmi=0.
If (b_gpmi=-1 AND hgmi=1 AND hgmiy le 1) b_gpmi=2.
VARIABLE LABELS b_gpMI 'gp diagnosis: MI'.
VALUE LABELS b_gpMI
        -1 'missing'
        0 'no'
        1 'yes'

2 'diagnose = yes, but year = missing'.

*MI algorithm: GP diagnosis and SR combined.
COMPUTE b_MI=-3.
IF (b_gpMI=1 and cgmis=1) b_MI=1.
IF (b_gpMI=1 and cgmis le 0 and b_srMI=1) b_MI=1.
IF (b_gpMI=1 and cgmis le 0 and b_srMI=0) b_MI=3.
IF (b_gpMI=1 and cgmis le 0 and b_srMI le -1) b_MI=2.
IF (b_gpMI=0 and b_srMI=1) b_MI=3.
IF (b_gpMI=0 and b_srMI=0) b_MI=0.
IF (b_gpMI=0 and b_srMI le -1) b_MI=0.
IF (b_gpMI=2 and b_srMI=1) b_MI=1.
IF (b_gpMI=2 and b_srMI=0) b_MI=0.
IF (b_gpMI=2 and b_srMI le -1) b_MI=-1.
IF (b_gpMI le -1 and b_srMI=1) b_MI=2.
IF (b_gpMI le -1 and b_srMI=0) b_MI=0.
IF (b_gpMI le -1 and b_srMI le -1) b_MI=-1.
VARIABLE LABELS b_MI 'B wave: myocardial infarction'.
VALUE LABELS b_MI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************ANGINA PECTORIS (AP) at B*********************.
*Selfreport diagnosis of AP.
COMPUTE b_srAP=-5.
IF (bhart01 le -1) b_srAP=-1.
IF (bhart01=1 and bhart10 le -1) b_srAP=-1.
IF (bhart01=0) b_srAP=0.
IF ((bhart01=1 and bhart10=0) or (bdiabe01=1 and bdiabe11=0)) b_srAP=0.
IF ((bhart01=1 and bhart10 ge 3) or (bdiabe01=1 and bdiabe11 ge 3)) b_srAP=0.
IF ((bhart10=1 and bhart11 le -1) OR (bdiabe11=1 and bdiabe12 le -1)) b_srAP=2.
IF (bhart11=0 or bdiabe12=0) b_srAP=0.
IF (bhart10=2 or bdiabe11=2) b_srAP=1.
IF (bhart11=1 or bdiabe12=1) b_srAP=1.
VARIABLE LABELS b_srAP 'self report: angina pectoris'.
VALUE LABELS b_srAP
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of AP.
COMPUTE b_gpAP=-3.
IF (cgap le -1) b_gpAP=-1.
IF (cgap=1 and cgapy le -1) b_gpAP=2.
IF (cgap=0) b_gpAP=0.
IF (cgap=1 and cgapy ge 4) b_gpAP=0.
IF (cgap=1 and cgapy=3 and t2_year=1992) b_gpAP=0.

IF (cgap=1 and (cgapy=1 OR cgapy=2)) b_gpAP=1.
IF (cgap=1 and (cgapy=3 and t2_YEAR=1993)) b_gpAP=1.
If (b_gpap=-1 AND egap=0) b_gpap=0.
If (b_gpap=-1 AND egap=1 AND egapy ge 2) b_gpap=0.
If (b_gpap=-1 AND egap=1 AND egapy le 1) b_gpap=2.
If (b_gpap=-1 AND fgap=0) b_gpap=0.
If (b_gpap=-1 AND fgap=1 AND fgapy ge 2) b_gpap=0.
If (b_gpap=-1 AND fgap=1 AND fgapy le 1) b_gpap=2.
If (b_gpap=-1 AND hgap=0) b_gpap=0.
If (b_gpap=-1 AND hgap=1 AND hgapy ge 2) b_gpap=0.
If (b_gpap=-1 AND hgap=1 AND hgapy le 1) b_gpap=2.
VARIABLE LABELS b_gpAP 'gp diagnosis: angina pectoris'.
VALUE LABELS b_gpAP
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*use of AP medication: nitrates.
RECODE bmed_ang (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO b_mAP.
IF (bmvar13 le -1) b_mAP=-1.
IF (bmvar13=0) b_mAP=0.
VARIABLE LABELS b_mAP 'use of nitratess'.
VALUE LABELS b_mAP
        -1 'missing'
        0 'no'
        1 'yes'.

*AP algorithm: medication, GP diagnosis and SR combined.
COMPUTE b_AP=-3.
IF (b_mAP=1) b_AP=1.
IF (b_mAP le 0 and b_srAP=1 and b_gpAP=1) b_AP=1.
IF (b_mAP le 0 and b_srAP=1 and b_gpAP=0) b_AP=3.
IF (b_mAP le 0 and b_srAP=1 and b_gpap=2) b_AP=1.
IF (b_mAP le 0 and b_srAP=1 and b_gpAP le -1) b_AP=2.
IF (b_mAP le 0 and b_srAP=0 and b_gpAP=1 and cgaps=1) b_AP=1.
IF (b_mAP le 0 and b_srAP=0 and b_gpAP=1 and cgaps le 0) b_AP=3.
IF (b_mAP le 0 and b_srAP=0 and b_gpAP=0) b_AP=0.
IF (b_mAP le 0 and b_srAP=0 and b_gpap=2) b_AP=0.
IF (b_mAP le 0 and b_srAP=0 and b_gpAP le -1) b_AP=0.
IF (b_mAP le 0 and b_srAP=2 and b_gpAP=1) b_AP=1.
IF (b_mAP le 0 and b_srAP=2 and b_gpAP=0) b_AP=0.
IF (b_mAP le 0 and b_srAP=2 and b_gpAP=2) b_AP=-1.
IF (b_mAP le 0 and b_srAP=2 and b_gpap=-1) b_AP=-1.
IF (b_mAP le 0 and b_srAP le -1 and b_gpAP=1 and cgaps=1) b_AP=1.
IF (b_mAP le 0 and b_srAP le -1 and b_gpAP=1 and cgaps le 0) b_AP=2.
IF (b_mAP le 0 and b_srAP le -1 and b_gpAP=0) b_AP=0.
IF (b_mAP le 0 and b_srAP le -1 and b_gpap=2) b_AP=-1.
IF (b_mAP le 0 and b_srAP le -1 and b_gpAP le -1) b_AP=-1.
VARIABLE LABELS b_AP 'B wave: angina pectoris'.
VALUE LABELS b_AP
        -1 'missing'

0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'.

*********************CONGESTIVE HEART FAILURE (CHF) at B********************.
*Selfreport diagnosis of CHF.
COMPUTE b_srCHF=-3.
IF (bhart01 le -1) b_srCHF=-1.
IF (bhart01=1 and bhart12 le -1) b_srCHF=-1.
IF (bhart01=0) b_srCHF=0.
IF (bhart01=1 and bhart12=0) b_srCHF=0.
IF (bhart01=1 and bhart12=1) b_srCHF=1.
VARIABLE LABELS b_srCHF 'self reported diagnosis of congestive heart failure'.
VALUE LABELS b_srCHF
          -1 'missing'
          0 'no'
          1 'yes'.

*GP diagnosis of CHF.
COMPUTE b_gpCHF=-3.
IF (cgchf le -1) b_gpCHF=-1.
IF (cgchf=1 and cgchfy le -1) b_gpCHF=2.
IF (cgchf=0) b_gpCHF=0.
IF (cgchf=1 and cgchfy ge 4) b_gpCHF=0.
IF (cgchf=1 and cgchfy=3 and t2_year=1992) b_gpCHF=0.
IF (cgchf=1 and (cgchfy=1 OR cgchfy=2)) b_gpCHF=1.
IF (cgchf=1 and (cgchfy=3 and t2_YEAR=1993)) b_gpCHF=1.
If (b_gpchf=-1 AND egchf=0) b_gpchf=0.
If (b_gpchf=-1 AND egchf=1 AND egchfy ge 2) b_gpchf=0.
If (b_gpchf=-1 AND egchf=1 AND egchfy le 1) b_gpchf=2.
If (b_gpchf=-1 AND fgchf=0) b_gpchf=0.
If (b_gpchf=-1 AND fgchf=1 AND fgchfy ge 2) b_gpchf=0.
If (b_gpchf=-1 AND fgchf=1 AND fgchfy le 1) b_gpchf=2.
If (b_gpchf=-1 AND hgchf=0) b_gpchf=0.
If (b_gpchf=-1 AND hgchf=1 AND hgchfy ge 2) b_gpchf=0.
If (b_gpchf=-1 AND hgchf=1 AND hgchfy le 1) b_gpchf=2.
VARIABLE LABELS b_gpCHF 'gp diagnosis: congestive heart failure'.
VALUE LABELS b_gpCHF
          -1 'missing'
          0 'no'
          1 'yes'
          2 'diagnose = yes, but year = missing'.

*CHF medication: diuretics, antihypertensives, nitrates, inotropics, beta blocking agents.
compute b_mCHF=0.
IF (bmed_diu=1 and (bmed_hyp=1 or bmed_ang=1 or bmed_ino=1 or bmed_beta=1)) b_mCHF=1.
IF (bmvar13 le -1) b_mCHF=-1.
IF (bmvar13=0) b_mCHF=0.
VARIABLE LABELS b_mCHF 'medication for congestive heart failure'.
VALUE LABELS b_mCHF
          -1 'missing'

0 'no'
        1 'yes'.

*CHF algorithm: medication, GP diagnosis and SR combined.
COMPUTE b_CHF=-3.
IF (b_gpCHF=1 and cgchfs=1) b_CHF=1.
IF (b_gpCHF=1 and cgchfs le 0 and b_srCHF=1) b_CHF=1.
IF (b_gpCHF=1 and cgchfs le 0 and b_srCHF le 0 and b_mCHF=1) b_CHF=1.
IF (b_gpCHF=1 and cgchfs le 0 and b_srCHF=0 and b_mCHF=0) b_CHF=2.
IF (b_gpCHF=1 and cgchfs le 0 and b_srCHF le 0 and b_mCHF le -1) b_CHF=2.
IF (b_gpCHF=1 and cgchfs le 0 and b_srCHF le -1 and b_mCHF le 0) b_CHF=2.
IF (b_gpCHF=0 and b_srCHF=1 and b_mCHF=1) b_CHF=1.
IF (b_gpCHF=0 and b_srCHF=1 and b_mCHF le 0) b_CHF=2.
IF (b_gpCHF=0 and b_srCHF le 0 and b_mCHF=1) b_CHF=3.
IF (b_gpCHF=0 and b_srCHF le 0 and b_mCHF le 0) b_CHF=0.
IF (b_gpCHF=2 and b_srCHF=1) b_CHF=1.
IF (b_gpCHF=2 and b_srCHF le 0 and b_mCHF=1) b_CHF=1.
IF (b_gpCHF=2 and b_srCHF le 0 and b_mCHF le 0) b_CHF=0.
IF (b_gpCHF=2 and b_srCHF=0 and b_mCHF=-1) b_CHF=-1.
IF (b_gpCHF=2 and b_srCHF le -1 and b_mCHF le -1) b_CHF=-1.
IF (b_gpCHF le -1 and b_srCHF=1 and b_mCHF=1) b_CHF=1.
IF (b_gpCHF le -1 and b_srCHF=1 and b_mCHF le 0) b_CHF=2.
IF (b_gpCHF le -1 and b_srCHF=0 and b_mCHF=1) b_CHF=2.
IF (b_gpCHF le -1 and b_srCHF=0 and b_mCHF le 0) b_CHF=0.
IF (b_gpCHF le -1 and b_srCHF le -1 and b_mCHF=1) b_CHF=2.
IF (b_gpCHF le -1 and b_srCHF le -1 and b_mCHF=0) b_CHF=0.
IF (b_gpCHF le -1 and b_srCHF le -1 and b_mCHF le -1) b_CHF=-1.
VARIABLE LABELS b_CHF 'B wave: congestive heart failure'.
VALUE LABELS b_CHF
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************PERIPHERAL ARTERIAL DISEASE (PAD) at B*********************.
*Selfreport diagnosis of PAD.
COMPUTE b_srPAD=-3.
IF (bartvei1 le -1) b_srPAD=-1.
IF (bartvei1=1 and bartvei5 le -1) b_srPAD=-1.
IF (bartvei1=0) b_srPAD=0.
IF ((bartvei5=1 and bartvei7 le -1) or (bdiabe07=1 and bdiabe09 le -1)) b_srPAD=2.
IF (bartvei7=0 or bdiabe09=0) b_srPAD=0.
IF (bartvei5=0 or bdiabe07=0) b_srPAD=0.
IF (bartvei7=1 or bdiabe09=1) b_srPAD=1.
VARIABLE LABELS b_srPAD 'self reported diagnosis of peripheral artery disease'.
VALUE LABELS b_srPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

```
*Selfreport surgery.
COMPUTE b_surPAD=-3.
IF (bartvei1 le -1) b_surPAD=-1.
IF ((bartve8c le -1 AND bartve8d le -1) AND (bartve8b le 0)) b_surPAD=-1.
IF (bartvei1=1 and bartvei8 le -1) b_surPAD=-1.
IF ((bartve8c=0 AND bartve8d=0) AND (bartve8b le 0)) b_surPAD=0.
IF (bartvei1=0) b_surPAD=0.
IF (bartvei8=0) b_surPAD=0.
IF ((bartve8c le 0 AND bartve8d le 0) AND (bartve8b=1)) b_surPAD=2.
IF (bartve8c=1 OR bartve8d=1) b_surPAD=1.
VARIABLE LABELS b_surPAD 'self reported surgery of peripheral arteries'.
VALUE LABELS b_surPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.


*GP diagnosis of PAD.
*GP diagnosis according to GP questionnaire of 1994.
COMPUTE bPAD94=-3.
IF (bgclan le -1) bPAD94=-2.
IF (bgclan=1 and bgclany le -1) bPAD94=-1.
IF (bgclan=1 and bgclany=93 and t2_year=1992) bPAD94=0.
IF (bgclan=0) bPAD94=0.
IF (bgclan=1 and (bgclany=93 and t2_YEAR=1993)) bPAD94=1.
IF (bgclan=1 and bgclany ge 58 and bgclany le 92) bPAD94=1.
VARIABLE LABELS bPAD94 'gp diagnosis: clan according to questionaire 1994'.
VALUE LABELS bPAD94
        -2 'missing'
        -1 'diagnose = yes, but year = missing'
        0 'no'
        1 'yes'.


*GP diagnosis according to GP questionnaire of 2000.
COMPUTE bpad2000=-3.
IF (cgartvei le -1) bpad2000=-2.
IF (cgartvei=1 and cgartvey le -1) bpad2000=-1.
IF (cgartvei=0) bpad2000=0.
IF (cgartvei=1 and cgartvey ge 4) bpad2000=0.
IF (cgartvei=1 and cgartvey=3 and t2_year=1992) bpad2000=0.
IF (cgartvei=1 and (cgartvey=1 OR cgartvey=2)) bpad2000=1.
IF (cgartvei=1 and (cgartvey=3 and t2_YEAR=1993)) bpad2000=1.
VARIABLE LABELS bpad2000 'gp diagnosis: PAD according to questionaire 2000'.
VALUE LABELS bpad2000
        -2 'missing'
        -1 'diagnose = yes, but year = missing'
        0 'no'
        1 'yes'.



*pad94 and pad2000 combined.
COMPUTE b_gpPAD=-3.
```

IF (bpad94 le -2 and bpad2000 le -2) b_gpPAD=-1.
IF (bpad94=0 and bpad2000=0) b_gpPAD=0.
IF (bpad94=0 and bpad2000 le -2) b_gpPAD=0.
IF (bpad94 le -2 and bpad2000=0) b_gpPAD=0.
IF (bpad94=1 or bpad94=-1 or bpad2000=1) b_gpPAD=1.
IF (bpad94=0 and bpad2000=-1) b_gpPAD=2.
IF (bpad94 le -2 and bpad2000=-1) b_gpPAD=2.
If (b_gpPAD=-1 AND egartvei=0) b_gpPAD=0.
If (b_gpPAD=-1 AND egartvei=1 AND egartvey ge 2) b_gpPAD=0.
If (b_gpPAD=-1 AND egartvei=1 AND egartvey le 1) b_gpPAD=2.
If (b_gpPAD=-1 AND fgartvei=0) b_gpPAD=0.
If (b_gpPAD=-1 AND fgartvei=1 AND fgartvey ge 2) b_gpPAD=0.
If (b_gpPAD=-1 AND fgartvei=1 AND fgartvey le 1) b_gpPAD=2.
If (b_gpPAD=-1 AND hgartvei=0) b_gpPAD=0.
If (b_gpPAD=-1 AND hgartvei=1 AND hgartvey ge 2) b_gpPAD=0.
If (b_gpPAD=-1 AND hgartvei=1 AND hgartvey le 1) b_gpPAD=2.
VARIABLE LABELS b_gpPAD 'gp diagnosis: PAD'.
VALUE LABELS b_gpPAD
          -1 'missing'
          0 'no'
          1 'yes'
          2 'diagnose = yes, but year = missing'.

*PAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE b_PAD=-3.
IF (b_surPAD=1) b_PAD=1.
IF (b_surPAD le 0 and b_gpPAD=1 and cgartves=1) b_PAD=1.
IF (b_surPAD le 0 and b_gpPAD=1 and cgartves le 0 and b_srPAD=1) b_PAD=1.
IF (b_surPAD le 0 and b_gpPAD=1 and cgartves le 0 and b_srPAD=0) b_PAD=3.
IF (b_surPAD le 0 and b_gpPAD=1 and cgartves le 0 and b_srPAD le -1) b_PAD=2.
IF (b_surPAD le 0 and b_gpPAD=1 and cgartves le 0 and b_srPAD=2) b_PAD=1.
IF (b_surPAD le 0 and b_gpPAD=0 and b_srPAD=1) b_PAD=3.
IF (b_surPAD le 0 and b_gpPAD=0 and b_srPAD=0) b_PAD=0.
IF (b_surPAD le 0 and b_gpPAD=0 and b_srPAD le -1) b_PAD=0.
IF (b_surPAD le 0 and b_gpPAD=0 and b_srPAD=2) b_PAD=0.
IF (b_surPAD le 0 and b_gpPAD=2 and b_srPAD=1) b_PAD=1.
IF (b_surPAD le 0 and b_gpPAD=2 and b_srPAD=0) b_PAD=0.
IF (b_surPAD le 0 and b_gpPAD=2 and b_srPAD le -1) b_PAD=-1.
IF (b_surPAD le 0 and b_gpPAD=2 and b_srPAD=2) b_PAD=1.
IF (b_surPAD le 0 and b_gpPAD le -1 and b_srPAD=1) b_PAD=2.
IF (b_surPAD le 0 and b_gpPAD le -1 and b_srPAD=0) b_PAD=0.
IF (b_surPAD le 0 and b_gpPAD le -1 and b_srPAD le -1) b_PAD=-1.
IF (b_surPAD le 0 and b_gpPAD le -1 and b_srPAD=2) b_PAD=-1.
IF (b_surPAD=2 and b_gpPAD=1) b_PAD=1.
IF (b_surPAD=2 and b_gpPAD=0 and b_srPAD=1) b_PAD=1.
IF (b_surPAD=2 and b_gpPAD=0 and b_srPAD=0) b_PAD=0.
IF (b_surPAD=2 and b_gpPAD=0 and b_srPAD le -1) b_PAD=0.
IF (b_surPAD=2 and b_gpPAD=0 and b_srPAD=2) b_PAD=3.
IF (b_surPAD=2 and b_gpPAD=2 and b_srPAD=1) b_PAD=1.
IF (b_surPAD=2 and b_gpPAD le -1 and b_srPAD=1) b_PAD=1.
IF (b_surPAD=2 and b_gpPAD le -1 and b_srPAD=0) b_PAD=0.
IF (b_surPAD=2 and b_gpPAD le -1 and b_srPAD le -1) b_PAD=-1.

IF (b_surPAD=2 and b_gpPAD le -1 and b_srPAD=2) b_PAD=-1.
VARIABLE LABELS b_PAD 'B wave algorithm: peripheral artery disease'.
VALUE LABELS b_PAD
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'.

*********************CORONARY ARTERY DISEASE (CAD) at B*********************.
*CAD Selfreport surgery.
COMPUTE b_surCAD=-3.
IF (bhart01 le -1) b_surCAD=-1.
IF (bhart01=1 and bhart15 le -1) b_surCAD=-1.
IF (bhart15b le -1 AND bhart15c le -1) b_surCAD=-1.
IF (bhart15b=0 AND bhart15c=0) b_surCAD=0.
IF (bhart15=0) b_surCAD=0.
IF (bhart01=0) b_surCAD=0.
IF (bhart15b=1 OR bhart15c=1) b_surCAD=1.
VARIABLE LABELS b_surCAD 'self reported surgery of coronary arteries'.
VALUE LABELS b_surCAD
          -1 'missing'
          0 'no'
          1 'yes'.

*CAD selfreport (=Selfreport of AP or MI).
COMPUTE b_srCAD=-5.
IF (bhart01 le -1) b_srCAD=-1.
IF (b_srMI=0 AND b_srAP=2) b_srCAD=-1.
IF (b_srMI=0 AND b_srAP le -1) b_srCAD=-1.
IF (b_srMI le -1 AND b_srAP=0) b_srCAD=-1.
IF (b_srMI le -1 AND b_srAP=2) b_srCAD=-1.
IF (b_srMI le -1 AND b_srAP le -1) b_srCAD=-1.
IF (b_srMI=0 AND b_srAP=0) b_srCAD=0.
IF (bhart01=0) b_srCAD=0.
IF (b_srMI=1) b_srCAD=1.
IF (b_srAP=1) b_srCAD=1.
VARIABLE LABELS b_srCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS b_srCAD
          -1 'missing'
          0 'no'
          1 'yes'.

*GP diagnosis of CAD (gp diagnosis of AP or MI).
COMPUTE b_gpCAD=-5.
IF (b_gpMI le -1 AND b_gpAP=0) b_gpCAD=-1.
IF (b_gpMI=0 AND b_gpAP le -1) b_gpCAD=-1.
IF (b_gpMI le -1 AND b_gpAP le -1) b_gpCAD=-1.
IF (b_gpMI=0 AND b_gpAP=0) b_gpCAD=0.
IF (b_gpMI=0 AND b_gpAP=2) b_gpCAD=2.
IF (b_gpMI le -1 AND b_gpAP=2) b_gpCAD=2.
IF (b_gpMI=2 AND b_gpAP=0) b_gpCAD=2.

IF (b_gpMI=2 AND b_gpAP=2) b_gpCAD=2.
IF (b_gpMI=2 AND b_gpAP le -1) b_gpCAD=2.
IF (b_gpMI=1) b_gpCAD=1.
IF (b_gpAP=1) b_gpCAD=1.
VARIABLE LABELS b_gpCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS b_gpCAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE b_CAD=-3.
IF ((b_mAP le 0 and b_surCAD le 0) and b_srMI le 0 and (b_srAP le 0 or b_srAP=2) and b_gpMI le 0) b_CAD=0.
IF (b_mAP le -1 and b_surCAD le -1 and b_srMI le -1 and b_srAP le -1 and b_gpAP le -1 and b_gpMI le -1) b_CAD=-1.
IF (b_mAP=0 and b_surCAD=0 and b_srMI=0 and b_srAP=0 and b_gpAP=0 and b_gpMI=0) b_CAD=0.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_srAP=1 and (b_srMI le 0 and b_gpAP le 0 and b_gpMI le 0))) b_CAD=3.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_srMI=1 and (b_srAP le 0 and b_gpAP le 0 and b_gpMI le 0))) b_CAD=3.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpAP=1 and cgaps le 0 and (b_gpMI le 0 or b_gpMI=2) and b_srAP le 0 and b_srMI le 0)) b_CAD=3.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpMI=1 and cgmis le 0 and (b_gpAP le 0 or b_gpAP=2) and b_srAP le 0 and b_srMI le 0)) b_CAD=3.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_srAP=1 and (b_srMI le -1 and b_gpAP le -1 and b_gpMI le -1))) b_CAD=2.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_srMI=1 and (b_srAP le -1 and b_gpAP le -1 and b_gpMI le -1))) b_CAD=2.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpAP=1 and cgaps le 0 and b_gpMI le -1 and b_srAP le -1 and b_srMI le -1)) b_CAD=2.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpMI=1 and cgmis le 0 and b_gpAP le -1 and b_srAP le -1 and b_srMI le -1)) b_CAD=2.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpAP=2 and (b_gpMI le 0 or b_gpMI=2) and (b_srAP le 0 or b_srAP=2) and b_srMI le 0)) b_CAD=0.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpMI=2 and (b_gpAP le 0 or b_gpAP=2) and (b_srAP le 0 or b_srAP=2) and b_srMI le 0)) b_CAD=0.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpMI=2 and (b_gpMI le -1 or b_gpMI=2) and (b_srAP le -1 or b_srAP=2) and b_srMI le -1)) b_CAD=-1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpMI=2 and (b_gpAP le -1 or b_gpAP=2) and (b_srAP le -1 or b_srAP=2) and b_srMI le -1)) b_CAD=-1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_srAP=1 and (b_srMI=1 OR b_gpAP=1 OR b_gpMI=1))) b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_srMI=1 and (b_srAP=1 OR b_gpAP=1 OR b_gpMI=1))) b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpAP=1 and cgaps=1)) b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpMI=1 and cgmis=1)) b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpAP=1 and cgaps le 0) and (b_srMI=1 or b_srAP=1 or b_gpMI=1)) b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpMI=1 and cgmis le 0) and (b_srMI=1 or b_srAP=1 or b_gpAP=1)) b_CAD=1.

IF ((b_mAP le 0 and b_surCAD le 0) and (b_srAP=1 and b_srMI le 0) and (b_gpAP=2 or b_gpMI=2))
b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_srMI=1) and (b_gpAP=2 or b_srAP=2 or b_gpMI=2))
b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpAP=1 and b_srMI le 0) and (b_srAP=2 and b_gpMI=2))
b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_gpMI=1 and b_srMI le 0) and (b_gpAP=2 or b_srAP=2))
b_CAD=1.
IF ((b_mAP le 0 and b_surCAD le 0) and (b_srAP=1 and b_gpAP=2) or (b_srMI=1 and b_gpMI=2))
b_CAD=1.
IF (b_mAP=1 or b_surCAD=1) b_CAD=1.
VARIABLE LABELS b_CAD 'B wave: coronary artery disease'.
VALUE LABELS b_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************C WAVE****************.
*tamsulosin is categorized as antihypertensive, but is never used as antihypertensive; its for BPH.
If (cmatc1='C02CA01' and cmmed1='omnic') cmatc1='G04CA02' .
If (cmatc2='C02CA01' and cmmed2='omnic') cmatc2='G04CA02' .
If (cmatc3='C02CA01' and cmmed3='omnic') cmatc3='G04CA02' .
If (cmatc4='C02CA01' and cmmed4='omnic') cmatc4='G04CA02' .
If (cmatc5='C02CA01' and cmmed5='omnic') cmatc5='G04CA02' .
If (cmatc6='C02CA01' and cmmed6='omnic') cmatc6='G04CA02' .
If (cmatc7='C02CA01' and cmmed7='omnic') cmatc7='G04CA02' .
If (cmatc8='C02CA01' and cmmed8='omnic') cmatc8='G04CA02' .

*cmed_ino: no errors.
*cmed_ari: no errors.

*med_ang.
*ISORBIDE   S01E   C01DA   = Isosorbide, could be mono or dinitrate, doesn matter for
now.
If (cmatc1='S01E') cmatc1='C01DA' .
If (cmatc2='S01E') cmatc2='C01DA' .
If (cmatc3='S01E') cmatc3='C01DA' .
If (cmatc4='S01E') cmatc4='C01DA' .
If (cmatc5='S01E') cmatc5='C01DA' .
If (cmatc6='S01E') cmatc6='C01DA' .
If (cmatc7='S01E') cmatc7='C01DA' .
If (cmatc8='S01E') cmatc8='C01DA' .

*med_diu: C03.
*FUROSEMIDUM   C02CA01   --> C03CA01.
If (cmatc1='C02CA01' and cmmed1='FUROSEMIDUM') cmatc1='C03CA01' .
If (cmatc2='C02CA01' and cmmed2='FUROSEMIDUM') cmatc2='C03CA01' .
If (cmatc3='C02CA01' and cmmed3='FUROSEMIDUM') cmatc3='C03CA01' .
If (cmatc4='C02CA01' and cmmed4='FUROSEMIDUM') cmatc4='C03CA01' .
If (cmatc5='C02CA01' and cmmed5='FUROSEMIDUM') cmatc5='C03CA01' .

If (cmatc6='C02CA01' and cmmed6='FUROSEMIDUM') cmatc6='C03CA01' .
If (cmatc7='C02CA01' and cmmed7='FUROSEMIDUM') cmatc7='C03CA01' .
If (cmatc8='C02CA01' and cmmed8='FUROSEMIDUM') cmatc8='C03CA01' .
EXECUTE.

*HYDROCHLORTHIAZIDUM COMP   C02LA01 -->   C03AA03 .
If (cmatc1='C02LA01') cmatc1='C03AA03' .
If (cmatc2='C02LA01') cmatc2='C03AA03' .
If (cmatc3='C02LA01') cmatc3='C03AA03' .
If (cmatc4='C02LA01') cmatc4='C03AA03' .
If (cmatc5='C02LA01') cmatc5='C03AA03' .
If (cmatc6='C02LA01') cmatc6='C03AA03' .
If (cmatc7='C02LA01') cmatc7='C03AA03' .
If (cmatc8='C02LA01') cmatc8='C03AA03' .
EXECUTE.

*med_hyp: C02 C07 C08 C09.
*C02.
* remaining medication coded as C02 but should not be C02.
*TRANDATE   C02CB01   --> C07AG01.
If (cmatc1='C02CB01') cmatc1='C07AG02' .
If (cmatc2='C02CB01') cmatc2='C07AG02' .
If (cmatc3='C02CB01') cmatc3='C07AG02' .
If (cmatc4='C02CB01') cmatc4='C07AG02' .
If (cmatc5='C02CB01') cmatc5='C07AG02' .
If (cmatc6='C02CB01') cmatc6='C07AG02' .
If (cmatc7='C02CB01') cmatc7='C07AG02' .
If (cmatc8='C02CB01') cmatc8='C07AG02' .

*NORVASC   C02DE12   --> C08CA01.
If (cmatc1='C02DE12') cmatc1='C08CA01' .
If (cmatc2='C02DE12') cmatc2='C08CA01' .
If (cmatc3='C02DE12') cmatc3='C08CA01' .
If (cmatc4='C02DE12') cmatc4='C08CA01' .
If (cmatc5='C02DE12') cmatc5='C08CA01' .
If (cmatc6='C02DE12') cmatc6='C08CA01' .
If (cmatc7='C02DE12') cmatc7='C08CA01' .
If (cmatc8='C02DE12') cmatc8='C08CA01' .

*PLENDIL   C02DE10   --> C08CA02.
If (cmatc1='C02DE10') cmatc1='C08CA02' .
If (cmatc2='C02DE10') cmatc2='C08CA02' .
If (cmatc3='C02DE10') cmatc3='C08CA02' .
If (cmatc4='C02DE10') cmatc4='C08CA02' .
If (cmatc5='C02DE10') cmatc5='C08CA02' .
If (cmatc6='C02DE10') cmatc6='C08CA02' .
If (cmatc7='C02DE10') cmatc7='C08CA02' .
If (cmatc8='C02DE10') cmatc8='C08CA02' .

*LOMIR   C02DE13   --> C08CA03.
If (cmatc1='C02DE13') cmatc1='C08CA03' .
If (cmatc2='C02DE13') cmatc2='C08CA03' .

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If (cmatc3='C02DE13') cmatc3='C08CA03' .
If (cmatc4='C02DE13') cmatc4='C08CA03' .
If (cmatc5='C02DE13') cmatc5='C08CA03' .
If (cmatc6='C02DE13') cmatc6='C08CA03' .
If (cmatc7='C02DE13') cmatc7='C08CA03' .
If (cmatc8='C02DE13') cmatc8='C08CA03' .

*CARDENE      C02DE09        --> C08CA04.
If (cmatc1='C02DE09') cmatc1='C08CA04' .
If (cmatc2='C02DE09') cmatc2='C08CA04' .
If (cmatc3='C02DE09') cmatc3='C08CA04' .
If (cmatc4='C02DE09') cmatc4='C08CA04' .
If (cmatc5='C02DE09') cmatc5='C08CA04' .
If (cmatc6='C02DE09') cmatc6='C08CA04' .
If (cmatc7='C02DE09') cmatc7='C08CA04' .
If (cmatc8='C02DE09') cmatc8='C08CA04' .

*ADALAT, ADALAT RETARD, NIFEDIPINE, NIFEDIPINE DUMEX, NIFEDIPINE PHARBITA, NIFEDIPINUM
              C02DE02        --> C08CA05 .
If (cmatc1='C02DE02') cmatc1='C08CA05' .
If (cmatc2='C02DE02') cmatc2='C08CA05' .
If (cmatc3='C02DE02') cmatc3='C08CA05' .
If (cmatc4='C02DE02') cmatc4='C08CA05' .
If (cmatc5='C02DE02') cmatc5='C08CA05' .
If (cmatc6='C02DE02') cmatc6='C08CA05' .
If (cmatc7='C02DE02') cmatc7='C08CA05' .
If (cmatc8='C02DE02') cmatc8='C08CA05' .

*SYSCOR        C02DE14        --> C08CA07.
If (cmatc1='C02DE14') cmatc1='C08CA07' .
If (cmatc2='C02DE14') cmatc2='C08CA07' .
If (cmatc3='C02DE14') cmatc3='C08CA07' .
If (cmatc4='C02DE14') cmatc4='C08CA07' .
If (cmatc5='C02DE14') cmatc5='C08CA07' .
If (cmatc6='C02DE14') cmatc6='C08CA07' .
If (cmatc7='C02DE14') cmatc7='C08CA07' .
If (cmatc8='C02DE14') cmatc8='C08CA07' .

*ISOPTINE, VERAPAMIL C02DE01        --> C08DA01.
If (cmatc1='C02DE01') cmatc1='C08DA01' .
If (cmatc2='C02DE01') cmatc2='C08DA01' .
If (cmatc3='C02DE01') cmatc3='C08DA01' .
If (cmatc4='C02DE01') cmatc4='C08DA01' .
If (cmatc5='C02DE01') cmatc5='C08DA01' .
If (cmatc6='C02DE01') cmatc6='C08DA01' .
If (cmatc7='C02DE01') cmatc7='C08DA01' .
If (cmatc8='C02DE01') cmatc8='C08DA01' .

*DILTIAZEM, TILDIEM, TILDIEM CR      C02DE04        --> C08DB01.
If (cmatc1='C02DE04') cmatc1='C08DB01' .
If (cmatc2='C02DE04') cmatc2='C08DB01' .
If (cmatc3='C02DE04') cmatc3='C08DB01' .
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If (cmatc4='C02DE04') cmatc4='C08DB01' .
If (cmatc5='C02DE04') cmatc5='C08DB01' .
If (cmatc6='C02DE04') cmatc6='C08DB01' .
If (cmatc7='C02DE04') cmatc7='C08DB01' .
If (cmatc8='C02DE04') cmatc8='C08DB01' .

*CAPOTEN       C02EA01         --> C09AA01.
If (cmatc1='C02EA01') cmatc1='C09AA01' .
If (cmatc2='C02EA01') cmatc2='C09AA01' .
If (cmatc3='C02EA01') cmatc3='C09AA01' .
If (cmatc4='C02EA01') cmatc4='C09AA01' .
If (cmatc5='C02EA01') cmatc5='C09AA01' .
If (cmatc6='C02EA01') cmatc6='C09AA01' .
If (cmatc7='C02EA01') cmatc7='C09AA01' .
If (cmatc8='C02EA01') cmatc8='C09AA01' .

*RENITEC        C02EA02         --> C09AA02.
If (cmatc1='C02EA02') cmatc1='C09AA02' .
If (cmatc2='C02EA02') cmatc2='C09AA02' .
If (cmatc3='C02EA02') cmatc3='C09AA02' .
If (cmatc4='C02EA02') cmatc4='C09AA02' .
If (cmatc5='C02EA02') cmatc5='C09AA02' .
If (cmatc6='C02EA02') cmatc6='C09AA02' .
If (cmatc7='C02EA02') cmatc7='C09AA02' .
If (cmatc8='C02EA02') cmatc8='C09AA02' .

*NOVATEC, ZESTRIL    C02EA03         --> C09AA03 .
If (cmatc1='C02EA03') cmatc1='C09AA03' .
If (cmatc2='C02EA03') cmatc2='C09AA03' .
If (cmatc3='C02EA03') cmatc3='C09AA03' .
If (cmatc4='C02EA03') cmatc4='C09AA03' .
If (cmatc5='C02EA03') cmatc5='C09AA03' .
If (cmatc6='C02EA03') cmatc6='C09AA03' .
If (cmatc7='C02EA03') cmatc7='C09AA03' .
If (cmatc8='C02EA03') cmatc8='C09AA03' .

*COVERSYL      C02EA04         --> C09AA04 .
If (cmatc1='C02EA04') cmatc1='C09AA04' .
If (cmatc2='C02EA04') cmatc2='C09AA04' .
If (cmatc3='C02EA04') cmatc3='C09AA04' .
If (cmatc4='C02EA04') cmatc4='C09AA04' .
If (cmatc5='C02EA04') cmatc5='C09AA04' .
If (cmatc6='C02EA04') cmatc6='C09AA04' .
If (cmatc7='C02EA04') cmatc7='C09AA04' .
If (cmatc8='C02EA04') cmatc8='C09AA04' .

*ACUPRIL       C02EA06         --> C09AA06 .
If (cmatc1='C02EA06') cmatc1='C09AA06' .
If (cmatc2='C02EA06') cmatc2='C09AA06' .
If (cmatc3='C02EA06') cmatc3='C09AA06' .
If (cmatc4='C02EA06') cmatc4='C09AA06' .
If (cmatc5='C02EA06') cmatc5='C09AA06' .
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If (cmatc6='C02EA06') cmatc6='C09AA06' .
If (cmatc7='C02EA06') cmatc7='C09AA06' .
If (cmatc8='C02EA06') cmatc8='C09AA06' .

*ACEPLUS   C02LM01 -->   N02BE51   NSAID? Paracetamol & Caffeine.
If (cmatc1='C02LM01' and cmmed1='ACEPLUS') cmatc1='N02BE51' .
If (cmatc2='C02LM01' and cmmed2='ACEPLUS') cmatc2='N02BE51' .
If (cmatc3='C02LM01' and cmmed3='ACEPLUS') cmatc3='N02BE51' .
If (cmatc4='C02LM01' and cmmed4='ACEPLUS') cmatc4='N02BE51' .
If (cmatc5='C02LM01' and cmmed5='ACEPLUS') cmatc5='N02BE51' .
If (cmatc6='C02LM01' and cmmed6='ACEPLUS') cmatc6='N02BE51' .
If (cmatc7='C02LM01' and cmmed7='ACEPLUS') cmatc7='N02BE51' .
If (cmatc8='C02LM01' and cmmed8='ACEPLUS') cmatc8='N02BE51' .

*CAPOZIDE   C02LM01   --> C09BA01.
If (cmatc1='C02LM01') cmatc1='C09BA01' .
If (cmatc2='C02LM01') cmatc2='C09BA01' .
If (cmatc3='C02LM01') cmatc3='C09BA01' .
If (cmatc4='C02LM01') cmatc4='C09BA01' .
If (cmatc5='C02LM01') cmatc5='C09BA01' .
If (cmatc6='C02LM01') cmatc6='C09BA01' .
If (cmatc7='C02LM01') cmatc7='C09BA01' .
If (cmatc8='C02LM01') cmatc8='C09BA01' .

*CO-RENITEC   C02LM02   --> C09BA02.
If (cmatc1='C02LM02') cmatc1='C09BA02' .
If (cmatc2='C02LM02') cmatc2='C09BA02' .
If (cmatc3='C02LM02') cmatc3='C09BA02' .
If (cmatc4='C02LM02') cmatc4='C09BA02' .
If (cmatc5='C02LM02') cmatc5='C09BA02' .
If (cmatc6='C02LM02') cmatc6='C09BA02' .
If (cmatc7='C02LM02') cmatc7='C09BA02' .
If (cmatc8='C02LM02') cmatc8='C09BA02' .

*ZESTORETIC   C02LM03   --> C09BA03.
If (cmatc1='C02LM03') cmatc1='C09BA03' .
If (cmatc2='C02LM03') cmatc2='C09BA03' .
If (cmatc3='C02LM03') cmatc3='C09BA03' .
If (cmatc4='C02LM03') cmatc4='C09BA03' .
If (cmatc5='C02LM03') cmatc5='C09BA03' .
If (cmatc6='C02LM03') cmatc6='C09BA03' .
If (cmatc7='C02LM03') cmatc7='C09BA03' .
If (cmatc8='C02LM03') cmatc8='C09BA03' .
EXECUTE.

*C07.
*CHANGED UNDER C02.

*C08.
*CHANGED UNDER C02.

*C09.

*CHANGED UNDER C02.

*create a string variable that consists of the first 3 characters of the ATC code.
string c_3ATC1(a30).
COMPUTE c_3ATC1 = CHAR.SUBSTR(cmatc1,1,3) .
string c_3ATC2(a30).
COMPUTE c_3ATC2 = CHAR.SUBSTR(cmatc2,1,3) .
string c_3ATC3(a30).
COMPUTE c_3ATC3 = CHAR.SUBSTR(cmatc3,1,3) .
string c_3ATC4(a30).
COMPUTE c_3ATC4 = CHAR.SUBSTR(cmatc4,1,3) .
string c_3ATC5(a30).
COMPUTE c_3ATC5 = CHAR.SUBSTR(cmatc5,1,3) .
string c_3ATC6(a30).
COMPUTE c_3ATC6 = CHAR.SUBSTR(cmatc6,1,3) .
string c_3ATC7(a30).
COMPUTE c_3ATC7 = CHAR.SUBSTR(cmatc7,1,3) .
string c_3ATC8(a30).
COMPUTE c_3ATC8 = CHAR.SUBSTR(cmatc8,1,3) .

*create a string variable that consists of the first 4 characters of the ATC code.
string c_4ATC1(a30).
COMPUTE c_4ATC1 = CHAR.SUBSTR(cmatc1,1,4) .
string c_4ATC2(a30).
COMPUTE c_4ATC2 = CHAR.SUBSTR(cmatc2,1,4) .
string c_4ATC3(a30).
COMPUTE c_4ATC3 = CHAR.SUBSTR(cmatc3,1,4) .
string c_4ATC4(a30).
COMPUTE c_4ATC4 = CHAR.SUBSTR(cmatc4,1,4) .
string c_4ATC5(a30).
COMPUTE c_4ATC5 = CHAR.SUBSTR(cmatc5,1,4) .
string c_4ATC6(a30).
COMPUTE c_4ATC6 = CHAR.SUBSTR(cmatc6,1,4) .
string c_4ATC7(a30).
COMPUTE c_4ATC7 = CHAR.SUBSTR(cmatc7,1,4) .
string c_4ATC8(a30).
COMPUTE c_4ATC8 = CHAR.SUBSTR(cmatc8,1,4) .

*create a string variable that consists of the first 5 characters of the ATC code.
string c_5ATC1(a30).
COMPUTE c_5ATC1 = CHAR.SUBSTR(cmatc1,1,5) .
string c_5ATC2(a30).
COMPUTE c_5ATC2 = CHAR.SUBSTR(cmatc2,1,5) .
string c_5ATC3(a30).
COMPUTE c_5ATC3 = CHAR.SUBSTR(cmatc3,1,5) .
string c_5ATC4(a30).
COMPUTE c_5ATC4 = CHAR.SUBSTR(cmatc4,1,5) .
string c_5ATC5(a30).
COMPUTE c_5ATC5 = CHAR.SUBSTR(cmatc5,1,5) .
string c_5ATC6(a30).
COMPUTE c_5ATC6 = CHAR.SUBSTR(cmatc6,1,5) .
string c_5ATC7(a30).

```
COMPUTE c_5ATC7 = CHAR.SUBSTR(cmatc7,1,5) .
string c_5ATC8(a30).
COMPUTE c_5ATC8 = CHAR.SUBSTR(cmatc8,1,5) .
EXECUTE.

*cmed_ino: no errors.
*cmed_ari no errors.
*med_ang.
RECODE cmed_ang (ELSE=COPY) INTO cmed_ang_or.
VARIABLE LABELS  cmed_ang_or 'origineel'.
EXECUTE.
RECODE cmed_ang (ELSE=-3).
EXECUTE.
If (cmvar13 le -1) cmed_ang=-1.
If (cmvar13=2 or cmvar13=1) cmed_ang=0.
If (c_4atc1='C01D' OR c_4atc2='C01D' OR c_4atc3='C01D' OR c_4atc4='C01D' OR c_4atc5='C01D' OR
c_4atc6='C01D') cmed_ang=1.
EXECUTE.

*med_diu: C03.
RECODE cmed_diu (ELSE=COPY) INTO cmed_diu_or.
VARIABLE LABELS  cmed_diu_or 'origineel'.
EXECUTE.
RECODE cmed_diu (ELSE=-3).
EXECUTE.
If (cmvar13 le -1) cmed_diu=-1.
If (cmvar13=2 or cmvar13=1) cmed_diu=0.
If (c_4ATC1='C03' OR c_3ATC2='C03' OR c_3ATC3='C03' OR c_3ATC4='C03' OR c_3ATC5='C03' OR
c_3ATC6='C03' OR c_3ATC7='C03' OR c_3ATC8='C03') cmed_diu=1.
EXECUTE.
*some diuretics are combination preps and therefore (incorrectly) not included in the diuretics
variable.
*C07B C07C  C07D C02L C09BA C08G .
If (c_4ATC1='C07B' OR c_4ATC2='C07B' OR c_4ATC3='C07B' OR c_4ATC4='C07B' OR c_4ATC5='C07B'
OR c_4ATC6='C07B' OR
c_4ATC7='C07B' OR c_4ATC8='C07B') cmed_diu=1.
If (c_4ATC1='C07C' OR c_4ATC2='C07C' OR c_4ATC3='C07C' OR c_4ATC4='C07C' OR c_4ATC5='C07C'
OR c_4ATC6='C07C' OR
c_4ATC7='C07C' OR c_4ATC8='C07C') cmed_diu=1.
If (c_4ATC1='C07D' OR c_4ATC2='C07D' OR c_4ATC3='C07D' OR c_4ATC4='C07D' OR c_4ATC5='C07D'
OR c_4ATC6='C07D' OR
c_4ATC7='C07D' OR c_4ATC8='C07D') cmed_diu=1.
If (c_4ATC1='C02L' OR c_4ATC2='C02L' OR c_4ATC3='C02L' OR c_4ATC4='C02L' OR c_4ATC5='C02L'
OR c_4ATC6='C02L' OR
c_4ATC7='C02L' OR c_4ATC8='C02L') cmed_diu=1.
If (c_5ATC1='C09BA' OR c_5ATC2='C09BA' OR c_5ATC3='C09BA' OR c_5ATC4='C09BA' OR
c_5ATC5='C09BA' OR c_5ATC6='C09BA' OR c_5ATC7='C09BA' OR c_5ATC8='C09BA') imed_diu=1.
If (c_5ATC1='C09DA' OR c_5ATC2='C09DA' OR c_5ATC3='C09DA' OR c_5ATC4='C09DA' OR
c_5ATC5='C09DA' OR c_5ATC6='C09DA'  OR c_5ATC7='C09DA'  OR c_5ATC8='C09DA') imed_diu=1.
If (c_4ATC1='C08G' OR c_4ATC2='C08G' OR c_4ATC3='C08G' OR c_4ATC4='C08G' OR c_4ATC5='C08G'
OR c_4ATC6='C08G' OR c_4ATC7='C08G' OR c_4ATC8='C08G') imed_diu=1.
EXECUTE.
```

*med_hyp: C02 C07 C08 C09.
RECODE cmed_hyp (ELSE=COPY) INTO cmed_hyp_or.
VARIABLE LABELS cmed_hyp_or 'origineel'.
EXECUTE.
RECODE cmed_hyp (ELSE=-3).
EXECUTE.
If (cmvar13 le -1) cmed_hyp=-1.
If (cmvar13=2 or cmvar13=1) cmed_hyp=0.
If (c_3ATC1='C02' OR c_3ATC2='C02' OR c_3ATC3='C02' OR c_3ATC4='C02' OR c_3ATC5='C02' OR
c_3ATC6='C02' OR c_3ATC7='C02' OR c_3ATC8='C02') cmed_hyp=1.
If (c_3ATC1='C07' OR c_3ATC2='C07' OR c_3ATC3='C07' OR c_3ATC4='C07' OR c_3ATC5='C07' OR
c_3ATC6='C07' OR c_3ATC7='C07' OR c_3ATC8='C07') cmed_hyp=1.
If (c_3ATC1='C08' OR c_3ATC2='C08' OR c_3ATC3='C08' OR c_3ATC4='C08' OR c_3ATC5='C08' OR
c_3ATC6='C08' OR c_3ATC7='C08' OR c_3ATC8='C08') cmed_hyp=1.
If (c_3ATC1='C09' OR c_3ATC2='C09' OR c_3ATC3='C09' OR c_3ATC4='C09' OR c_3ATC5='C09' OR
c_3ATC6='C09' OR c_3ATC7='C09' OR c_3ATC8='C09') cmed_hyp=1.
EXECUTE.

*create a variable: use of anticoagulant drugs (vitamine K antagonists, DOACs, dabigatran (atc codes
B01AA, B01AF, B01AE)) yes/no.
compute cmed_stolling=0.
If (cmvar13 le -1) cmed_stolling=-1.
If (c_5ATC1='B01AA' OR c_5ATC2='B01AA' OR c_5ATC3='B01AA' OR c_5ATC4='B01AA' OR
c_5ATC5='B01AA' OR c_5ATC6='B01AA' OR
c_5ATC7='B01AA' OR c_5ATC8='B01AA') cmed_stolling=1.
If (c_5ATC1='B01AF' OR c_5ATC2='B01AF' OR c_5ATC3='B01AF' OR c_5ATC4='B01AF' OR
c_5ATC5='B01AF' OR c_5ATC6='B01AF' OR
c_5ATC7='B01AF' OR c_5ATC8='B01AF') cmed_stolling=1.
If (c_5ATC1='B01AE' OR c_5ATC2='B01AE' OR c_5ATC3='B01AE' OR c_5ATC4='B01AE' OR
c_5ATC5='B01AE' OR c_5ATC6='B01AE' OR
c_5ATC7='B01AE' OR c_5ATC8='B01AE') cmed_stolling=1.
VARIABLE LABELS cmed_stolling 'use of anticoagulants'.
VALUE LABELS cmed_stolling
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*create a variable: use of beta blocking agents (atc code C07, thus includes combination preparaten)
yes/no.
compute cmed_beta=0.
If (cmvar13 le -1) cmed_beta=-1.
If (c_3ATC1='C07' OR c_3ATC2='C07' OR c_3ATC3='C07' OR c_3ATC4='C07' OR c_3ATC5='C07' OR
c_3ATC6='C07' OR
c_3ATC7='C07' OR c_3ATC8='C07') cmed_beta=1.
VARIABLE LABELS cmed_beta 'use of beta blocking agents'.
VALUE LABELS cmed_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*combining anticoagulants and betablocking agents: use of both, yes/no.
compute cmed_stol_beta=-3.
If (cmed_stolling=-1) cmed_stol_beta=-1.
If (cmed_stolling=1 and cmed_beta=1) cmed_stol_beta=1.
If (cmed_stolling=0 or cmed_beta=0) cmed_stol_beta=0.
VARIABLE LABELS cmed_stol_beta 'use of both beta blocking agent AND anticoagulantia'.
VALUE LABELS cmed_stol_beta
         -1 'missing'
         0 'no'
         1 'yes'.
EXECUTE.

********************year of interview (1995 or 1996).
COMPUTE t3_YEAR=XDATE.YEAR(t3_dat).
VARIABLE LABELS t3_YEAR "LASA main interview year (w3)".
VARIABLE LEVEL t3_YEAR(SCALE).
FORMATS t3_YEAR(F8.0).
VARIABLE WIDTH t3_YEAR(8).
EXECUTE.

********************ARRHYTHMIA (ARI) at C********************.
*Selfreport surgery implantation of pacemaker.
COMPUTE c_surARI=-3.
IF (chart15d le -1) c_surARI=-1.
IF (chart01 le -1) c_surARI=-1.
IF (chart15 le -1) c_surARI=-1.
IF (chart01=0 or chart01=1) c_surARI=0.
IF (chart15d=0) c_surARI=0.
IF (chart15=1) c_surARI=0.
IF (chart15d=1) c_surARI=1.
VARIABLE LABELS c_surARI 'self report surgery: pacemaker'.
VALUE LABELS c_surARI
         -1 'missing'
         0 'no'
         1 'yes'.

*use of anti arrythmic medication.
RECODE cmed_ARI (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO c_mARI.
IF (cmed_ino=1) c_mARI=1.
IF (cmvar13=1) c_mARI=0.
IF (cmvar13 le -1) c_mARI=-1.
VARIABLE LABELS c_mARI 'use of antiarrhythmics'.
VALUE LABELS c_mARI
         -1 'missing'
         0 'no'
         1 'yes'.

*GP diagnosis of ARI.
COMPUTE c_gpARI=-3.
IF (cgarrth le -1) c_gpARI=-1.
IF (cgarrth=1 and cgarrty le -1) c_gpARI=2.

IF (cgarrth=0) c_gpARI=0.
IF (cgarrth=1 and cgarrty=6 and t3_year=1995) c_gpARI=0.
IF (cgarrth=1 and cgarrty ge 7) c_gpARI=0.
IF (cgarrth=1 and (cgarrty ge 0 and cgarrty le 5)) c_gpARI=1.
IF (cgarrth=1 and cgarrty=6 and t3_YEAR=1996) c_gpARI=1.
IF (t3_year le -1) c_gpARI=-2.
If (c_gpARI=-1 AND egarrth=0) c_gpARI=0.
If (c_gpARI=-1 AND egarrth=1 AND egarrty ge 2) c_gpARI=0.
If (c_gpARI=-1 AND egarrth=1 AND egarrty le 1) c_gpARI=2.
If (c_gpARI=-1 AND fgarrth=0) c_gpARI=0.
If (c_gpARI=-1 AND fgarrth=1 AND fgarrthy ge 2) c_gpARI=0.
If (c_gpARI=-1 AND fgarrth=1 AND fgarrthy le 1) c_gpARI=2.
If (c_gpARI=-1 AND hgarrth=0) c_gpARI=0.
If (c_gpARI=-1 AND hgarrth=1 AND hgarrthy ge 2) c_gpARI=0.
If (c_gpARI=-1 AND hgarrth=1 AND hgarrthy le 1) c_gpARI=2.
VARIABLE LABELS c_gpARI 'gp diagnosis: cardiac arrhythmia'.
VALUE LABELS c_gpARI
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*ARI algorithm: medication, GP diagnosis and SR implantation of pacemaker combined.
compute c_alg_ARI=-3.
IF (c_mARI=1) c_alg_ARI=1.
IF (c_mARI=0 and c_gpARI=1 and (cmed_stol_beta=1)) c_alg_ARI=1.
IF (c_mARI=0 and c_gpARI=1 and (cmed_stol_beta=0) and cgarrths=1) c_alg_ARI=1.
IF (c_mARI=0 and c_gpARI=1 and (cmed_stol_beta=0) and cgarrths le 0 and c_surARI=1) c_alg_ARI=1.
IF (c_mARI=0 and c_gpARI=1 and (cmed_stol_beta=0) and cgarrths le 0 and c_surARI le 0)
c_alg_ARI=2.
IF (c_mARI=0 and c_gpARI=0 and c_surARI=1) c_alg_ARI=3.
IF (c_mARI=0 and c_gpARI=0 and c_surARI le 0) c_alg_ARI=0.
IF (c_mARI=0 and c_gpARI=2 and (cmed_stol_beta=1)) c_alg_ARI=1.
IF (c_mARI=0 and c_gpARI=2 and (cmed_stol_beta=0) and c_surARI=1) c_alg_ARI=1.
IF (c_mARI=0 and c_gpARI=2 and (cmed_stol_beta=0) and c_surARI le 0) c_alg_ARI=0.
IF (c_mARI=0 and c_gpARI=2 and (cmed_stol_beta=0) and c_surARI le -1) c_alg_ARI=0.
IF (c_mARI=0 and c_gpARI=-1 and c_surARI=1) c_alg_ARI=2.
IF (c_mARI=0 and c_gpARI=-1 and (cmed_stol_beta=0) and c_surARI=0) c_alg_ARI=0.
IF (c_mARI=0 and c_gpARI=-1 and (cmed_stol_beta=0) and c_surARI le -1) c_alg_ARI=-1.
IF (c_mARI=0 and c_gpARI=-1 and (cmed_stol_beta=1) and c_surARI le 0) c_alg_ARI=-1.
IF (c_mARI le -1 and c_gpARI=1 and cgarrths=1) c_alg_ARI=1.
IF (c_mARI le -1 and c_gpARI=1 and cgarrths le 0 and c_surARI=1) c_alg_ARI=1.
IF (c_mARI le -1 and c_gpARI=1 and cgarrths le 0 and c_surARI le 0) c_alg_ARI=2.
IF (c_mARI le -1 and c_gpARI=0 and c_surARI=1) c_alg_ARI=3.
IF (c_mARI le -1 and c_gpARI=0 and c_surARI le 0) c_alg_ARI=0.
IF (c_mARI le -1 and c_gpARI=2 and c_surARI=1) c_alg_ARI=1.
IF (c_mARI le -1 and c_gpARI=2 and c_surARI le 0) c_alg_ARI=-1.
IF (c_mARI le -1 and c_gpARI le -1 and c_surARI=1) c_alg_ARI=2.
IF (c_mARI le -1 and c_gpARI le -1 and c_surARI le 0) c_alg_ARI=-1.
IF (c_alg_ARI=-1 and cthart01=0) c_alg_ARI=0.
VARIABLE LABELS c_alg_ARI 'C wave: arrythmia'.

VALUE LABELS c_alg_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CEREBROVASCULAR ACCIDENT (CVA) at C*********************.
*Selfreport diagnosis of CVA.
COMPUTE c_srCVA=-3.
IF (ccva01 le -1 and ctcva01 le -1) c_srCVA=-1.
IF (ctcva01=0) c_srCVA=0.
IF (ccva01=0 or ccva01=1) c_srCVA=0.
IF (ccva01=2 or ccva01=3) c_srCVA=1.
IF (ctcva01=1) c_srCVA=1.
VARIABLE LABELS c_srCVA 'self report: CVA'.
VALUE LABELS c_srCVA
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CVA.
COMPUTE c_gpCVA=-3.
IF (cgcva le -1) c_gpCVA=-1.
IF (cgcva=1 and cgcvay=6 and t3_year=1995) c_gpCVA=0.
IF (cgcva=0) c_gpCVA=0.
IF (cgcva=1 and cgcvay ge 7) c_gpCVA=0.
IF (cgcva=1 and cgcvay le -1) c_gpCVA=2.
IF (cgcva=1 and (cgcvay ge 1 and cgcvay le 5)) c_gpCVA=1.
IF (cgcva=1 and (cgcvay=6 and t3_YEAR=1996.0)) c_gpCVA=1.
IF (bgcva=1) c_gpCVA=1.
If (c_gpCVA=-1 AND egcva=0) c_gpCVA=0.
If (c_gpCVA=-1 AND egcva=1 AND egcvay ge 2) c_gpCVA=0.
If (c_gpCVA=-1 AND egcva=1 AND egcvay le 1) c_gpCVA=2.
If (c_gpCVA=-1 AND fgcva=0) c_gpCVA=0.
If (c_gpCVA=-1 AND fgcva=1 AND fgcvay ge 2) c_gpCVA=0.
If (c_gpCVA=-1 AND fgcva=1 AND fgcvay le 1) c_gpCVA=2.
If (c_gpCVA=-1 AND hgcva=0) c_gpCVA=0.
If (c_gpCVA=-1 AND hgcva=1 AND hgcvay ge 2) c_gpCVA=0.
If (c_gpCVA=-1 AND hgcva=1 AND hgcvay le 1) c_gpCVA=2.
VARIABLE LABELS c_gpCVA 'gp diagnosis: CVA'.
VALUE LABELS c_gpCVA
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CVA algorithm: GP diagnosis and SR combined.
COMPUTE c_alg_CVA=-3.
IF (c_gpCVA=1 and cgcvas=1) c_alg_CVA=1.
IF (c_gpCVA=1 and cgcvas le 0 and c_srCVA=1) c_alg_CVA=1.

IF (c_gpCVA=1 and cgcvas le 0 and c_srCVA=0) c_alg_CVA=3.
IF (c_gpCVA=1 and cgcvas le 0 and c_srCVA le -1) c_alg_CVA=2.
IF (c_gpCVA=0 and c_srCVA=1) c_alg_CVA=3.
IF (c_gpCVA=0 and c_srCVA=0) c_alg_CVA=0.
IF (c_gpCVA=0 and c_srCVA le -1) c_alg_CVA=0.
IF (c_gpCVA=2 and c_srCVA=1) c_alg_CVA=1.
IF (c_gpCVA=2 and c_srCVA=0) c_alg_CVA=0.
IF (c_gpCVA=2 and c_srCVA le -1) c_alg_CVA=-1.
IF (c_gpCVA le -1 and c_srCVA=1) c_alg_CVA=2.
IF (c_gpCVA le -1 and c_srCVA=0) c_alg_CVA=0.
IF (c_gpCVA le -1 and c_srCVA le -1) c_alg_CVA=-1.
VARIABLE LABELS c_alg_CVA 'C wave: cerebrovascular accident'.
VALUE LABELS c_alg_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************MYOCARDIAL INFARCTION (MI) at C*********************.
*Selfreport diagnosis of MI.
COMPUTE c_srMI=-5.
IF (chart01 le -1) c_srMI=-1.
IF ((chart01=2 or chart01=3) and chart05 le -1) c_srMI=-1.
IF (chart05=1) c_srMI=0.
IF (chart01=0 or chart01=1) c_srMI=0.
IF (chart05=2) c_srMI=1.
IF (cthart01=0) c_srMI=0.
VARIABLE LABELS c_srMI 'self report: myocardial infarction'.
VALUE LABELS c_srMI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of MI.
COMPUTE c_gpMI=-3.
IF (cgmi le -1) c_gpMI=-1.
IF (cgmi=1 and cgmiy le -1) c_gpMI=2.
IF (cgmi=0) c_gpMI=0.
IF (cgmi=1 and cgmiy=6 and t3_year=1995) c_gpMI=0.
IF (cgmi=1 and cgmiy ge 7) c_gpMI=0.
IF (cgmi=1 and (cgmiy ge 0 and cgmiy le 5)) c_gpMI=1.
IF (cgmi=1 and cgmiy=6 and t3_YEAR=1996) c_gpMI=1.
IF (t3_year le -1) c_gpMI=-2.
If (c_gpmi=-1 AND egmi=0) c_gpmi=0.
If (c_gpmi=-1 AND egmi=1 AND egmiy ge 2) c_gpmi=0.
If (c_gpmi=-1 AND egmi=1 AND egmiy le 1) c_gpmi=2.
If (c_gpmi=-1 AND fgmi=0) c_gpmi=0.
If (c_gpmi=-1 AND fgmi=1 AND fgmiy ge 2) c_gpmi=0.
If (c_gpmi=-1 AND fgmi=1 AND fgmiy le 1) c_gpmi=2.
If (c_gpmi=-1 AND hgmi=0) c_gpmi=0.

If (c_gpmi=-1 AND hgmi=1 AND hgmiy ge 2) c_gpmi=0.
If (c_gpmi=-1 AND hgmi=1 AND hgmiy le 1) c_gpmi=2.
VARIABLE LABELS c_gpMI 'gp diagnosis: MI'.
VALUE LABELS c_gpMI
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*MI algorithm: GP diagnosis and SR combined.
COMPUTE c_alg_MI=-3.
IF (c_gpMI=1 and cgmis=1) c_alg_MI=1.
IF (c_gpMI=1 and cgmis le 0 and c_srMI=1) c_alg_MI=1.
IF (c_gpMI=1 and cgmis le 0 and c_srMI=0) c_alg_MI=3.
IF (c_gpMI=1 and cgmis le 0 and c_srMI le -1) c_alg_MI=2.
IF (c_gpMI=0 and c_srMI=1) c_alg_MI=3.
IF (c_gpMI=0 and c_srMI=0) c_alg_MI=0.
IF (c_gpMI=0 and c_srMI le -1) c_alg_MI=0.
IF (c_gpMI=2 and c_srMI=1) c_alg_MI=1.
IF (c_gpMI=2 and c_srMI=0) c_alg_MI=0.
IF (c_gpMI=2 and c_srMI le -1) c_alg_MI=-1.
IF (c_gpMI le -1 and c_srMI=1) c_alg_MI=2.
IF (c_gpMI le -1 and c_srMI=0) c_alg_MI=0.
IF (c_gpMI le -1 and c_srMI le -1) c_alg_MI=-1.
VARIABLE LABELS c_alg_MI 'C wave: myocardial infarction'.
VALUE LABELS c_alg_MI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************ANGINA PECTORIS (AP) at C*********************.
*Selfreport diagnosis of AP.
COMPUTE c_srAP=-5.
IF (chart01 le -1) c_srAP=-1.
IF ((chart01=2 or chart01=3) and chart10 le -1) c_srAP=-1.
IF (chart01=0 or chart01=1) c_srAP=0.
IF (chart11=1 or cdiabe12=1) c_srAP=0.
if (((chart01=2 or chart01=3) and chart10=1) OR ((cdiabe01=2 or cdiabe01=3) and cdiabe11=1))
c_srAP=0.
IF (((chart01=2 or chart01=3) and chart10 ge 4) OR ((cdiabe01=2 or cdiabe01=3) and cdiabe11 ge 4))
c_srAP=0.
IF (((chart01=2 or chart01=3) and chart10=2 and chart11 le -1) OR ((cdiabe01=2 or cdiabe01=3) and
cdiabe11=2 and cdiabe12 le -1)) c_srAP=2.
IF (chart11=2 or cdiabe12=2) c_srAP=1.
IF (chart10=3 or cdiabe11=3) c_srAP=1.
IF (cthart01=0) c_srAP=0.
VARIABLE LABELS c_srAP 'self report: angina pectoris'.
VALUE LABELS c_srAP
        -1 'missing'

```
        0 'no'
        1 'yes'
        2 'possible'.


*GP diagnosis of AP.
COMPUTE c_gpAP=-3.
IF (cgap le -1) c_gpAP=-1.
IF (cgap=1 and cgapy le -1) c_gpAP=2.
IF (cgap=0) c_gpAP=0.
IF (cgap=1 and cgapy=6 and t3_year=1995) c_gpAP=0.
IF (cgap=1 and cgapy ge 7) c_gpAP=0.
IF (cgap=1 and (cgapy ge 0 and cgapy le 5)) c_gpAP=1.
IF (cgap=1 and cgapy=6 and t3_YEAR=1996) c_gpAP=1.
IF (t3_year le -1) c_gpAP=-2.
If (c_gpap=-1 AND egap=0) c_gpap=0.
If (c_gpap=-1 AND egap=1 AND egapy ge 2) c_gpap=0.
If (c_gpap=-1 AND egap=1 AND egapy le 1) c_gpap=2.
If (c_gpap=-1 AND fgap=0) c_gpap=0.
If (c_gpap=-1 AND fgap=1 AND fgapy ge 2) c_gpap=0.
If (c_gpap=-1 AND fgap=1 AND fgapy le 1) c_gpap=2.
If (c_gpap=-1 AND hgap=0) c_gpap=0.
If (c_gpap=-1 AND hgap=1 AND hgapy ge 2) c_gpap=0.
If (c_gpap=-1 AND hgap=1 AND hgapy le 1) c_gpap=2.
VARIABLE LABELS c_gpAP 'gp diagnosis: angina pectoris'.
VALUE LABELS c_gpAP
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.


*use of AP medication: nitrates.
RECODE cmed_ang (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO c_mAP.
IF (cmvar13 le -1) c_mAP=-1.
IF (cmvar13=1) c_mAP=0.
VARIABLE LABELS  c_mAP 'use of nitratess'.
VALUE LABELS c_mAP
        -1 'missing'
        0 'no'
        1 'yes'.


*AP algorithm: medication, GP diagnosis and SR combined.
COMPUTE c_alg_AP=-3.
IF (c_mAP=1) c_alg_AP=1.
IF (c_mAP le 0 and c_srAP=1  and c_gpAP=1) c_alg_AP=1.
IF (c_mAP le 0 and c_srAP=1  and c_gpAP=0) c_alg_AP=3.
IF (c_mAP le 0 and c_srAP=1  and c_gpAP=2) c_alg_AP=1.
IF (c_mAP le 0 and c_srAP=1  and c_gpAP le -1) c_alg_AP=2.
IF (c_mAP le 0 and c_srAP=0  and c_gpAP=1 and cgaps=1) c_alg_AP=1.
IF (c_mAP le 0 and c_srAP=0  and c_gpAP=1 and cgaps le 0) c_alg_AP=3.
IF (c_mAP le 0 and c_srAP=0  and c_gpAP=0) c_alg_AP=0.
IF (c_mAP le 0 and c_srAP=0  and c_gpAP=2) c_alg_AP=0.
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IF (c_mAP le 0 and c_srAP=0 and c_gpAP le -1) c_alg_AP=0.
IF (c_mAP le 0 and c_srAP=2 and c_gpAP=1) c_alg_AP=1.
IF (c_mAP le 0 and c_srAP=2 and c_gpAP=0) c_alg_AP=0.
IF (c_mAP le 0 and c_srAP=2 and c_gpAP=2) c_alg_AP=-1.
IF (c_mAP le 0 and c_srAP=2 and c_gpAP=-1) c_alg_AP=-1.
IF (c_mAP le 0 and c_srAP le -1 and c_gpAP=1 and cgaps=1) c_alg_AP=1.
IF (c_mAP le 0 and c_srAP le -1 and c_gpAP=1 and cgaps le 0) c_alg_AP=2.
IF (c_mAP le 0 and c_srAP le -1 and c_gpAP=0) c_alg_AP=0.
IF (c_mAP le 0 and c_srAP le -1 and c_gpAP=2) c_alg_AP=-1.
IF (c_mAP le 0 and c_srAP le -1 and c_gpAP le -1) c_alg_AP=-1.
VARIABLE LABELS c_alg_AP 'C wave: angina pectoris'.
VALUE LABELS c_alg_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CONGESTIVE HEART FAILURE (CHF) at C*********************.
*Selfreport diagnosis of CHF.
COMPUTE c_srCHF=-3.
IF (chart01 le -1) c_srCHF=-1.
IF ((chart01=2 or chart01=3) and chart12 le -1) c_srCHF=-1.
IF (chart01=0 or chart01=1) c_srCHF=0.
IF ((chart01=2 or chart01=3) and chart12=1) c_srCHF=0.
IF ((chart01=2 or chart01=3) and chart12=2) c_srCHF=1.
IF (cthart01=0) c_srCHF=0.
VARIABLE LABELS c_srCHF 'self reported diagnosis of congestive heart failure'.
VALUE LABELS c_srCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CHF.
COMPUTE c_gpCHF=-3.
IF (cgchf le -1) c_gpCHF=-1.
IF (cgchf=1 and cgchfy le -1) c_gpCHF=2.
IF (cgchf=0) c_gpCHF=0.
IF (cgchf=1 and cgchfy=6 and t3_year=1995) c_gpCHF=0.
IF (cgchf=1 and cgchfy ge 7) c_gpCHF=0.
IF (cgchf=1 and (cgchfy ge 0 and cgchfy le 5)) c_gpCHF=1.
IF (cgchf=1 and cgchfy=6 and t3_YEAR=1996) c_gpCHF=1.
IF (t3_year le -1) c_gpCHF=-2.
If (c_gpchf=-1 AND egchf=0) c_gpchf=0.
If (c_gpchf=-1 AND egchf=1 AND egchfy ge 2) c_gpchf=0.
If (c_gpchf=-1 AND egchf=1 AND egchfy le 1) c_gpchf=2.
If (c_gpchf=-1 AND fgchf=0) c_gpchf=0.
If (c_gpchf=-1 AND fgchf=1 AND fgchfy ge 2) c_gpchf=0.
If (c_gpchf=-1 AND fgchf=1 AND fgchfy le 1) c_gpchf=2.
If (c_gpchf=-1 AND hgchf=0) c_gpchf=0.
If (c_gpchf=-1 AND hgchf=1 AND hgchfy ge 2) c_gpchf=0.
If (c_gpchf=-1 AND hgchf=1 AND hgchfy le 1) c_gpchf=2.

VARIABLE LABELS c_gpCHF 'gp diagnosis: congestive heart failure'.
VALUE LABELS c_gpCHF
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CHF medication: diuretics, antihypertensives, nitrates, inotropics, beta blocking agents.
compute c_mCHF=0.
if (cmed_diu=1 and (cmed_hyp=1 or cmed_ang=1 or cmed_ino=1 or cmed_beta=1)) c_mCHF=1.
IF (cmvar13 le -1) c_mCHF=-1.
IF (cmvar13=1) c_mCHF=0.
VARIABLE LABELS c_mCHF 'medication for congestive heart failure'.
VALUE LABELS c_mCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*CHF algorithm: medication, GP diagnosis and SR combined.
COMPUTE c_alg_CHF=-3.
IF (c_gpCHF=1 and cgchfs=1) c_alg_CHF=1.
IF (c_gpCHF=1 and cgchfs le 0 and c_srCHF=1) c_alg_CHF=1.
IF (c_gpCHF=1 and cgchfs le 0 and c_srCHF le 0 and c_mCHF=1) c_alg_CHF=1.
IF (c_gpCHF=1 and cgchfs le 0 and c_srCHF=0 and c_mCHF=0) c_alg_CHF=2.
IF (c_gpCHF=1 and cgchfs le 0 and c_srCHF le 0 and c_mCHF le -1) c_alg_CHF=2.
IF (c_gpCHF=1 and cgchfs le 0 and c_srCHF le -1 and c_mCHF le 0) c_alg_CHF=2.
IF (c_gpCHF=0 and c_srCHF=1 and c_mCHF=1) c_alg_CHF=1.
IF (c_gpCHF=0 and c_srCHF=1 and c_mCHF le 0) c_alg_CHF=2.
IF (c_gpCHF=0 and c_srCHF le 0 and c_mCHF=1) c_alg_CHF=3.
IF (c_gpCHF=0 and c_srCHF le 0 and c_mCHF le 0) c_alg_CHF=0.
IF (c_gpCHF=2 and c_srCHF=1) c_alg_CHF=1.
IF (c_gpCHF=2 and c_srCHF le 0 and c_mCHF=1) c_alg_CHF=1.
IF (c_gpCHF=2 and c_srCHF le 0 and c_mCHF le 0) c_alg_CHF=0.
IF (c_gpCHF=2 and c_srCHF=00 and c_mCHF=-1) c_alg_CHF=-1.
IF (c_gpCHF=2 and c_srCHF le -1 and c_mCHF le -1) c_alg_CHF=-1.
IF (c_gpCHF le -1 and c_srCHF=1 and c_mCHF=1) c_alg_CHF=1.
IF (c_gpCHF le -1 and c_srCHF=1 and c_mCHF le 0) c_alg_CHF=2.
IF (c_gpCHF le -1 and c_srCHF=0 and c_mCHF=1) c_alg_CHF=2.
IF (c_gpCHF le -1 and c_srCHF=0 and c_mCHF le 0) c_alg_CHF=0.
IF (c_gpCHF le -1 and c_srCHF le -1 and c_mCHF=1) c_alg_CHF=2.
IF (c_gpCHF le -1 and c_srCHF le -1 and c_mCHF=0) c_alg_CHF=0.
IF (c_gpCHF le -1 and c_srCHF le -1 and c_mCHF le -1) c_alg_CHF=-1.
VARIABLE LABELS c_alg_CHF 'C wave: congestive heart failure'.
VALUE LABELS c_alg_CHF
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

**********************PERIPHERAL ARTERIAL DISEASE (PAD) at C********************.

*Selfreport diagnosis of PAD.
COMPUTE c_srPAD=-5.
IF (cartvei1 le -1) c_srPAD=-1.
IF ((cartvei1=2 or cartvei1=3) and cartvei5 le -1) c_srPAD=-1.
IF (cartvei1=0 or cartvei1=1) c_srPAD=0.
IF (cartvei7=1 or cdiabe09=1) c_srPAD=0.
if (cartvei5=1 or cdiabe07=1) c_srPAD=0.
IF ((cartvei5=2 and cartvei7 le -1) or (cdiabe07=2 and cdiabe09 le -1)) c_srPAD=2.
IF (cartvei7=2 or cdiabe09=2) c_srPAD=1.
IF (ctartve1=0) c_srPAD=0.
IF (ctartve1=1) c_srPAD=2.
IF (cartvei1 le -1 and ctartve1 le -1) c_srPAD=-1.
VARIABLE LABELS c_srPAD 'self reported diagnosis of peripheral artery disease'.
VALUE LABELS c_srPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*Selfreport surgery.
COMPUTE c_surPAD=-3.
COMPUTE c_surPAD=-3.
IF (cartvei1 le -1) c_surPAD=-1.
IF ((cartvei1=2 or cartvei1=3) and cartve8 le -1) c_surPAD=-1.
IF (cartve8=1) c_surPAD=0.
IF ((cartve8c=0 AND cartve8d=0) AND (cartve8b le 0)) c_surPAD=0.
IF (cartvei1=0 or cartvei1=1) c_surPAD=0.
IF ((cartve8c le 0 AND cartve8d le 0) AND (cartve8b=1)) c_surPAD=2.
IF (cartve8c=1 OR cartve8d=1) c_surPAD=1.
VARIABLE LABELS c_surPAD 'self reported surgery of peripheral arteries'.
VALUE LABELS c_surPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of PAD.
COMPUTE c_gpPAD=-3.
IF (cgartvei le -1) c_gpPAD=-1.
IF (cgartvei=1 and cgartvey le -1) c_gpPAD=2.
IF (cgartvei=0) c_gpPAD=0.
IF (cgartvei=1 and cgartvey=6 and t3_year=1995) c_gpPAD=0.
IF (cgartvei=1 and cgartvey ge 7) c_gpPAD=0.
IF (cgartvei=1 and (cgartvey=6 and t3_YEAR=1996.0)) c_gpPAD=1.
IF (cgartvei=1 and (cgartvey ge 1 and cgartvey le 5)) c_gpPAD=1.
IF (bgclan=1) c_gpPAD=1.
IF (t3_year le -1) c_gpPAD=-2.
If (c_gpPAD=-1 AND egartvei=0) c_gpPAD=0.
If (c_gpPAD=-1 AND egartvei=1 AND egartvey ge 2) c_gpPAD=0.
If (c_gpPAD=-1 AND egartvei=1 AND egartvey le 1) c_gpPAD=2.
If (c_gpPAD=-1 AND fgartvei=0) c_gpPAD=0.
If (c_gpPAD=-1 AND fgartvei=1 AND fgartvey ge 2) c_gpPAD=0.

If (c_gpPAD=-1 AND fgartvei=1 AND fgartvey le 1) c_gpPAD=2.
If (c_gpPAD=-1 AND hgartvei=0) c_gpPAD=0.
If (c_gpPAD=-1 AND hgartvei=1 AND hgartvey ge 2) c_gpPAD=0.
If (c_gpPAD=-1 AND hgartvei=1 AND hgartvey le 1) c_gpPAD=2.
VARIABLE LABELS c_gpPAD 'gp diagnosis: PAD'.
VALUE LABELS c_gpPAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*PAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE c_alg_PAD=-3.
IF (c_surPAD=1) c_alg_PAD=1.
IF (c_surPAD le 0 and c_gpPAD=1 and cgartves=1) c_alg_PAD=1.
IF (c_surPAD le 0 and c_gpPAD=1 and cgartves le 0 and c_srPAD=1) c_alg_PAD=1.
IF (c_surPAD le 0 and c_gpPAD=1 and cgartves le 0 and c_srPAD=0) c_alg_PAD=3.
IF (c_surPAD le 0 and c_gpPAD=1 and cgartves le 0 and c_srPAD le -1) c_alg_PAD=2.
IF (c_surPAD le 0 and c_gpPAD=1 and cgartves le 0 and c_srPAD=2) c_alg_PAD=1.
IF (c_surPAD le 0 and c_gpPAD=0 and c_srPAD=1) c_alg_PAD=3.
IF (c_surPAD le 0 and c_gpPAD=0 and c_srPAD=0) c_alg_PAD=0.
IF (c_surPAD le 0 and c_gpPAD=0 and c_srPAD le -1) c_alg_PAD=0.
IF (c_surPAD le 0 and c_gpPAD=0 and c_srPAD=2) c_alg_PAD=0.
IF (c_surPAD le 0 and c_gpPAD=2 and c_srPAD=1) c_alg_PAD=1.
IF (c_surPAD le 0 and c_gpPAD=2 and c_srPAD=0) c_alg_PAD=0.
IF (c_surPAD le 0 and c_gpPAD=2 and c_srPAD le -1) c_alg_PAD=-1.
IF (c_surPAD le 0 and c_gpPAD=2 and c_srPAD=2) c_alg_PAD=1.
IF (c_surPAD le 0 and c_gpPAD le -1 and c_srPAD=1) c_alg_PAD=2.
IF (c_surPAD le 0 and c_gpPAD le -1 and c_srPAD=0) c_alg_PAD=0.
IF (c_surPAD le 0 and c_gpPAD le -1 and c_srPAD le -1) c_alg_PAD=-1.
IF (c_surPAD le 0 and c_gpPAD le -1 and c_srPAD=2) c_alg_PAD=-1.
IF (c_surPAD=2 and c_gpPAD=1) c_alg_PAD=1.
IF (c_surPAD=2 and c_gpPAD=0 and c_srPAD=1) c_alg_PAD=1.
IF (c_surPAD=2 and c_gpPAD=0 and c_srPAD=0) c_alg_PAD=0.
IF (c_surPAD=2 and c_gpPAD=0 and c_srPAD le -1) c_alg_PAD=0.
IF (c_surPAD=2 and c_gpPAD=0 and c_srPAD=2) c_alg_PAD=3.
IF (c_surPAD=2 and c_gpPAD=2 and c_srPAD=1) c_alg_PAD=1.
IF (c_surPAD=2 and c_gpPAD le -1 and c_srPAD=1) c_alg_PAD=1.
IF (c_surPAD=2 and c_gpPAD le -1 and c_srPAD=0) c_alg_PAD=0.
IF (c_surPAD=2 and c_gpPAD le -1 and c_srPAD le -1) c_alg_PAD=-1.
IF (c_surPAD=2 and c_gpPAD le -1 and c_srPAD=2) c_alg_PAD=-1.
VARIABLE LABELS c_alg_PAD 'C wave algorithm: peripheral artery disease'.
VALUE LABELS c_alg_PAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

********************CORONARY ARTERY DISEASE (CAD) at C********************.
*CAD Selfreport surgery.

COMPUTE c_surCAD=-3.
IF ((chart01=2 or chart01=3) and chart15 le -1) c_surCAD=-1.
IF (chart01 le -1) c_surCAD=-1.
IF (chart15b le -1 AND chart15c le -1) c_surCAD=-1.
IF (chart15b=0 AND chart15c=0) c_surCAD=0.
IF (chart15=1) c_surCAD=0.
IF (chart01=0 or chart01=1) c_surCAD=0.
IF (chart15b=1 OR chart15c=1) c_surCAD=1.
VARIABLE LABELS c_surCAD 'self reported surgery of coronary arteries'.
VALUE LABELS c_surCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*CAD selfreport (=Selfreport of AP or MI).
COMPUTE c_srCAD=-5.
IF (chart01 le -1) c_srCAD=-1.
IF (c_srMI=0 AND c_srAP=2) c_srCAD=-1.
IF (c_srMI=0 AND c_srAP le -1) c_srCAD=-1.
IF (c_srMI le -1 AND c_srAP=0) c_srCAD=-1.
IF (c_srMI le -1 AND c_srAP=2) c_srCAD=-1.
IF (c_srMI le -1 AND c_srAP le -1) c_srCAD=-1.
IF (c_srMI=0 AND c_srAP=0) c_srCAD=0.
IF (chart01=0 or chart01=1) c_srCAD=0.
IF (c_srMI le -1 AND c_srAP=1) c_srCAD=1.
IF (c_srMI=1) c_srCAD=1.
IF (c_srAP=1) c_srCAD=1.
IF (cthart01=0) c_srCAD=0.
VARIABLE LABELS c_srCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS c_srCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CAD (gp diagnosis of AP or MI).
COMPUTE c_gpCAD=-5.
IF (c_gpMI le -1 AND c_gpAP=0) c_gpCAD=-1.
IF (c_gpMI=0 AND c_gpAP le -1) c_gpCAD=-1.
IF (c_gpMI le -1 AND c_gpAP le -1) c_gpCAD=-1.
IF (c_gpMI=0 AND c_gpAP=0) c_gpCAD=0.
IF (c_gpMI=0 AND c_gpAP=2) c_gpCAD=2.
IF (c_gpMI le -1 AND c_gpAP=2) c_gpCAD=2.
IF (c_gpMI=2 AND c_gpAP=0) c_gpCAD=2.
IF (c_gpMI=2 AND c_gpAP=2) c_gpCAD=2.
IF (c_gpMI=2 AND c_gpAP le -1) c_gpCAD=2.
IF (c_gpMI=1) c_gpCAD=1.
IF (c_gpAP=1) c_gpCAD=1.
IF (t3_year le -1) c_gpCAD=-2.
VARIABLE LABELS c_gpCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS c_gpCAD
        -2 'dropout'
        -1 'missing'

0 'no'
1 'yes'
2 'diagnose = yes, but year = missing'.

*CAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE c_alg_CAD=-3.
IF (c_mAP le 0 and c_surCAD le 0 and c_srMI le 0 and (c_srAP le 0 or c_srAP=2) and c_gpMI le 0) c_alg_CAD=0.
IF (c_mAP le -1 and c_surCAD le -1 and c_srMI le -1 and c_srAP le -1 and c_gpAP le -1 and c_gpMI le -1) c_alg_CAD=-1.
IF (c_mAP=0 and c_surCAD=0 and c_srMI=0 and c_srAP=0 and c_gpAP=0 and c_gpMI=0) c_alg_CAD=0.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_srAP=1 and (c_srMI le 0 and c_gpAP le 0 and c_gpMI le 0))) c_alg_CAD=3.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_srMI=1 and (c_srAP le 0 and c_gpAP le 0 and c_gpMI le 0))) c_alg_CAD=3.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpAP=1 and cgaps le 0 and (c_gpMI le 0 or c_gpMI=2) and c_srAP le 0 and c_srMI le 0)) c_alg_CAD=3.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpMI=1 and cgmis le 0 and (c_gpAP le 0 or c_gpAP=2) and c_srAP le 0 and c_srMI le 0)) c_alg_CAD=3.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_srAP=1 and (c_srMI le -1 and c_gpAP le -1 and c_gpMI le -1))) c_alg_CAD=2.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_srMI=1 and (c_srAP le -1 and c_gpAP le -1 and c_gpMI le -1))) c_alg_CAD=2.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpAP=1 and cgaps le 0 and c_gpMI le -1 and c_srAP le -1 and c_srMI le -1)) c_alg_CAD=2.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpMI=1 and cgmis le 0 and c_gpAP le -1 and c_srAP le -1 and c_srMI le -1)) c_alg_CAD=2.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpAP=2 and (c_gpMI le 0 or c_gpMI=2) and (c_srAP le 0 or c_srAP=2) and c_srMI le 0)) c_alg_CAD=0.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpMI=2 and (c_gpAP le 0 or c_gpAP=2) and (c_srAP le 0 or c_srAP=2) and c_srMI le 0)) c_alg_CAD=0.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpAP=2 and (c_gpMI le -1 or c_gpMI=2) and (c_srAP le -1 or c_srAP=2) and c_srMI le -1)) c_alg_CAD=-1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpMI=2 and (c_gpAP le -1 or c_gpAP=2) and (c_srAP le -1 or c_srAP=2) and c_srMI le -1)) c_alg_CAD=-1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_srAP=1 and (c_srMI=1 OR c_gpAP=1 OR c_gpMI=1))) c_alg_CAD=1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_srMI=1 and (c_srAP=1 OR c_gpAP=1 OR c_gpMI=1))) c_alg_CAD=1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpAP=1 and cgaps=1)) c_alg_CAD=1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpMI=1 and cgmis=1)) c_alg_CAD=1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpAP=1 and cgaps le 0) and (c_srMI=1 or c_srAP=1 or c_gpMI=1)) c_alg_CAD=1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpMI=1 and cgmis le 0) and (c_srMI=1 or c_srAP=1 or c_gpAP=1)) c_alg_CAD=1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_srAP=1 and c_srMI le 0) and (c_gpAP=2 or c_gpMI=2)) c_alg_CAD=1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_srMI=1) and (c_gpAP=2 or c_srAP=2 or c_gpMI=2)) c_alg_CAD=1.
IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpAP=1 and c_srMI le 0) and (c_srAP=2 and c_gpMI=2)) c_alg_CAD=1.

IF ((c_mAP le 0 and c_surCAD le 0) and (c_gpMI=1 and c_srMI le 0) and (c_gpAP=2 or c_srAP=2))
c_alg_CAD=1.
IF (c_mAP=1 or c_surCAD=1) c_alg_CAD=1.
VARIABLE LABELS c_alg_CAD 'C wave: coronary artery disease'.
VALUE LABELS c_alg_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*******************D wave****************.
*tamsulosin is categorized as antihypertensive, but is never used as antihypertensive; its for BPH.
If (dmatc1='C02CA01' and dmmed1='omnic') dmatc1='G04CA02' .
If (dmatc2='C02CA01' and dmmed2='omnic') dmatc2='G04CA02' .
If (dmatc3='C02CA01' and dmmed3='omnic') dmatc3='G04CA02' .
If (dmatc4='C02CA01' and dmmed4='omnic') dmatc4='G04CA02' .
If (dmatc5='C02CA01' and dmmed5='omnic') dmatc5='G04CA02' .
If (dmatc6='C02CA01' and dmmed6='omnic') dmatc6='G04CA02' .
If (dmatc7='C02CA01' and dmmed7='omnic') dmatc7='G04CA02' .
If (dmatc8='C02CA01' and dmmed8='omnic') dmatc8='G04CA02' .

*dmed_ino: no errors.
*dmed_ari: no errors.
*dmed_ang no errors.

*med_diu: C03.
*HYDROCHLORTHIAZIDE   C03EA01 -->   C03AA03 .
If (dmatc1='C03EA01' and dmmed1='hydrochloorthiazide') dmatc1='C03AA03' .
If (dmatc2='C03EA01' and dmmed2='hydrochloorthiazide') dmatc2='C03AA03' .
If (dmatc3='C03EA01' and dmmed3='hydrochloorthiazide') dmatc3='C03AA03' .
If (dmatc4='C03EA01' and dmmed4='hydrochloorthiazide') dmatc4='C03AA03' .
If ((dmatc5='C03EA01' and dmmed5='hydrochloorthiazide') dmatc5='C03AA03' .
If (dmatc6='C03EA01' and dmmed6='hydrochloorthiazide') dmatc6='C03AA03' .
If (dmatc7='C03EA01' and dmmed7='hydrochloorthiazide') dmatc7='C03AA03' .
If (dmatc8='C03EA01' and dmmed8='hydrochloorthiazide') dmatc8='C03AA03' .
EXECUTE.

*med_hyp: C02 C07 C08 C09.
*C02.
* remaining medication coded as C02 but should not be C02.
*TRANDATE   C02CB01   --> C07AG01.
If (dmatc1='C02CB01') dmatc1='C07AG02' .
If (dmatc2='C02CB01') dmatc2='C07AG02' .
If (dmatc3='C02CB01') dmatc3='C07AG02' .
If (dmatc4='C02CB01') dmatc4='C07AG02' .
If (dmatc5='C02CB01') dmatc5='C07AG02' .
If (dmatc6='C02CB01') dmatc6='C07AG02' .
If (dmatc7='C02CB01') dmatc7='C07AG02' .
If (dmatc8='C02CB01') dmatc8='C07AG02' .

*NORVASC   C02DE12   --> C08CA01.

If (dmatc1='C02DE12') dmatc1='C08CA01' .
If (dmatc2='C02DE12') dmatc2='C08CA01' .
If (dmatc3='C02DE12') dmatc3='C08CA01' .
If (dmatc4='C02DE12') dmatc4='C08CA01' .
If (dmatc5='C02DE12') dmatc5='C08CA01' .
If (dmatc6='C02DE12') dmatc6='C08CA01' .
If (dmatc7='C02DE12') dmatc7='C08CA01' .
If (dmatc8='C02DE12') dmatc8='C08CA01' .

*PLENDIL   C02DE10   --> C08CA02.
If (dmatc1='C02DE10') dmatc1='C08CA02' .
If (dmatc2='C02DE10') dmatc2='C08CA02' .
If (dmatc3='C02DE10') dmatc3='C08CA02' .
If (dmatc4='C02DE10') dmatc4='C08CA02' .
If (dmatc5='C02DE10') dmatc5='C08CA02' .
If (dmatc6='C02DE10') dmatc6='C08CA02' .
If (dmatc7='C02DE10') dmatc7='C08CA02' .
If (dmatc8='C02DE10') dmatc8='C08CA02' .

*LOMIR   C02DE13   --> C08CA03.
If (dmatc1='C02DE13') dmatc1='C08CA03' .
If (dmatc2='C02DE13') dmatc2='C08CA03' .
If (dmatc3='C02DE13') dmatc3='C08CA03' .
If (dmatc4='C02DE13') dmatc4='C08CA03' .
If (dmatc5='C02DE13') dmatc5='C08CA03' .
If (dmatc6='C02DE13') dmatc6='C08CA03' .
If (dmatc7='C02DE13') dmatc7='C08CA03' .
If (dmatc8='C02DE13') dmatc8='C08CA03' .

*CARDENE   C02DE09   --> C08CA04.
If (dmatc1='C02DE09') dmatc1='C08CA04' .
If (dmatc2='C02DE09') dmatc2='C08CA04' .
If (dmatc3='C02DE09') dmatc3='C08CA04' .
If (dmatc4='C02DE09') dmatc4='C08CA04' .
If (dmatc5='C02DE09') dmatc5='C08CA04' .
If (dmatc6='C02DE09') dmatc6='C08CA04' .
If (dmatc7='C02DE09') dmatc7='C08CA04' .
If (dmatc8='C02DE09') dmatc8='C08CA04' .

*ADALAT, ADALAT RETARD, NIFEDIPINE, NIFEDIPINE DUMEX, NIFEDIPINE PHARBITA, NIFEDIPINUM
              C02DE02   --> C08CA05 .
If (dmatc1='C02DE02') dmatc1='C08CA05' .
If (dmatc2='C02DE02') dmatc2='C08CA05' .
If (dmatc3='C02DE02') dmatc3='C08CA05' .
If (dmatc4='C02DE02') dmatc4='C08CA05' .
If (dmatc5='C02DE02') dmatc5='C08CA05' .
If (dmatc6='C02DE02') dmatc6='C08CA05' .
If (dmatc7='C02DE02') dmatc7='C08CA05' .
If (dmatc8='C02DE02') dmatc8='C08CA05' .

*SYSCOR   C02DE14   --> C08CA07.
If (dmatc1='C02DE14') dmatc1='C08CA07' .

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If (dmatc2='C02DE14') dmatc2='C08CA07' .
If (dmatc3='C02DE14') dmatc3='C08CA07' .
If (dmatc4='C02DE14') dmatc4='C08CA07' .
If (dmatc5='C02DE14') dmatc5='C08CA07' .
If (dmatc6='C02DE14') dmatc6='C08CA07' .
If (dmatc7='C02DE14') dmatc7='C08CA07' .
If (dmatc8='C02DE14') dmatc8='C08CA07' .

*ISOPTINE, VERAPAMIL C02DE01        --> C08DA01.
If (dmatc1='C02DE01') dmatc1='C08DA01' .
If (dmatc2='C02DE01') dmatc2='C08DA01' .
If (dmatc3='C02DE01') dmatc3='C08DA01' .
If (dmatc4='C02DE01') dmatc4='C08DA01' .
If (dmatc5='C02DE01') dmatc5='C08DA01' .
If (dmatc6='C02DE01') dmatc6='C08DA01' .
If (dmatc7='C02DE01') dmatc7='C08DA01' .
If (dmatc8='C02DE01') dmatc8='C08DA01' .

*DILTIAZEM, TILDIEM, TILDIEM CR     C02DE04        --> C08DB01.
If (dmatc1='C02DE04') dmatc1='C08DB01' .
If (dmatc2='C02DE04') dmatc2='C08DB01' .
If (dmatc3='C02DE04') dmatc3='C08DB01' .
If (dmatc4='C02DE04') dmatc4='C08DB01' .
If (dmatc5='C02DE04') dmatc5='C08DB01' .
If (dmatc6='C02DE04') dmatc6='C08DB01' .
If (dmatc7='C02DE04') dmatc7='C08DB01' .
If (dmatc8='C02DE04') dmatc8='C08DB01' .

*CAPOTEN     C02EA01        --> C09AA01.
If (dmatc1='C02EA01') dmatc1='C09AA01' .
If (dmatc2='C02EA01') dmatc2='C09AA01' .
If (dmatc3='C02EA01') dmatc3='C09AA01' .
If (dmatc4='C02EA01') dmatc4='C09AA01' .
If (dmatc5='C02EA01') dmatc5='C09AA01' .
If (dmatc6='C02EA01') dmatc6='C09AA01' .
If (dmatc7='C02EA01') dmatc7='C09AA01' .
If (dmatc8='C02EA01') dmatc8='C09AA01' .

*RENITEC      C02EA02        --> C09AA02.
If (dmatc1='C02EA02') dmatc1='C09AA02' .
If (dmatc2='C02EA02') dmatc2='C09AA02' .
If (dmatc3='C02EA02') dmatc3='C09AA02' .
If (dmatc4='C02EA02') dmatc4='C09AA02' .
If (dmatc5='C02EA02') dmatc5='C09AA02' .
If (dmatc6='C02EA02') dmatc6='C09AA02' .
If (dmatc7='C02EA02') dmatc7='C09AA02' .
If (dmatc8='C02EA02') dmatc8='C09AA02' .

*NOVATEC, ZESTRIL     C02EA03        --> C09AA03 .
If (dmatc1='C02EA03') dmatc1='C09AA03' .
If (dmatc2='C02EA03') dmatc2='C09AA03' .
If (dmatc3='C02EA03') dmatc3='C09AA03' .
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If (dmatc4='C02EA03') dmatc4='C09AA03' .
If (dmatc5='C02EA03') dmatc5='C09AA03' .
If (dmatc6='C02EA03') dmatc6='C09AA03' .
If (dmatc7='C02EA03') dmatc7='C09AA03' .
If (dmatc8='C02EA03') dmatc8='C09AA03' .

*COVERSYL    C02EA04        --> C09AA04 .
If (dmatc1='C02EA04') dmatc1='C09AA04' .
If (dmatc2='C02EA04') dmatc2='C09AA04' .
If (dmatc3='C02EA04') dmatc3='C09AA04' .
If (dmatc4='C02EA04') dmatc4='C09AA04' .
If (dmatc5='C02EA04') dmatc5='C09AA04' .
If (dmatc6='C02EA04') dmatc6='C09AA04' .
If (dmatc7='C02EA04') dmatc7='C09AA04' .
If (dmatc8='C02EA04') dmatc8='C09AA04' .

*ACUPRIL      C02EA06        --> C09AA06 .
If (dmatc1='C02EA06') dmatc1='C09AA06' .
If (dmatc2='C02EA06') dmatc2='C09AA06' .
If (dmatc3='C02EA06') dmatc3='C09AA06' .
If (dmatc4='C02EA06') dmatc4='C09AA06' .
If (dmatc5='C02EA06') dmatc5='C09AA06' .
If (dmatc6='C02EA06') dmatc6='C09AA06' .
If (dmatc7='C02EA06') dmatc7='C09AA06' .
If (dmatc8='C02EA06') dmatc8='C09AA06' .

*ACEPLUS      C02LM01 -->    N02BE51            NSAID? Paracetamol & Caffeine.
If (dmatc1='C02LM01' and dmmed1='ACEPLUS') dmatc1='N02BE51' .
If (dmatc2='C02LM01' and dmmed2='ACEPLUS') dmatc2='N02BE51' .
If (dmatc3='C02LM01' and dmmed3='ACEPLUS') dmatc3='N02BE51' .
If (dmatc4='C02LM01' and dmmed4='ACEPLUS') dmatc4='N02BE51' .
If (dmatc5='C02LM01' and dmmed5='ACEPLUS') dmatc5='N02BE51' .
If (dmatc6='C02LM01' and dmmed6='ACEPLUS') dmatc6='N02BE51' .
If (dmatc7='C02LM01' and dmmed7='ACEPLUS') dmatc7='N02BE51' .
If (dmatc8='C02LM01' and dmmed8='ACEPLUS') dmatc8='N02BE51' .

*CAPOZIDE     C02LM01        --> C09BA01.
If (dmatc1='C02LM01') dmatc1='C09BA01' .
If (dmatc2='C02LM01') dmatc2='C09BA01' .
If (dmatc3='C02LM01') dmatc3='C09BA01' .
If (dmatc4='C02LM01') dmatc4='C09BA01' .
If (dmatc5='C02LM01') dmatc5='C09BA01' .
If (dmatc6='C02LM01') dmatc6='C09BA01' .
If (dmatc7='C02LM01') dmatc7='C09BA01' .
If (dmatc8='C02LM01') dmatc8='C09BA01' .

*CO-RENITEC   C02LM02        --> C09BA02.
If (dmatc1='C02LM02') dmatc1='C09BA02' .
If (dmatc2='C02LM02') dmatc2='C09BA02' .
If (dmatc3='C02LM02') dmatc3='C09BA02' .
If (dmatc4='C02LM02') dmatc4='C09BA02' .
If (dmatc5='C02LM02') dmatc5='C09BA02' .
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If (dmatc6='C02LM02') dmatc6='C09BA02' .
If (dmatc7='C02LM02') dmatc7='C09BA02' .
If (dmatc8='C02LM02') dmatc8='C09BA02' .

*ZESTORETIC    C02LM03        --> C09BA03.
If (dmatc1='C02LM03') dmatc1='C09BA03' .
If (dmatc2='C02LM03') dmatc2='C09BA03' .
If (dmatc3='C02LM03') dmatc3='C09BA03' .
If (dmatc4='C02LM03') dmatc4='C09BA03' .
If (dmatc5='C02LM03') dmatc5='C09BA03' .
If (dmatc6='C02LM03') dmatc6='C09BA03' .
If (dmatc7='C02LM03') dmatc7='C09BA03' .
If (dmatc8='C02LM03') dmatc8='C09BA03' .
EXECUTE.

*nimotop       C02DE03        --> C08CA06.
If (dmatc1='C02LM03') dmatc1='C09BA03' .
If (dmatc2='C02LM03') dmatc2='C09BA03' .
If (dmatc3='C02LM03') dmatc3='C09BA03' .
If (dmatc4='C02LM03') dmatc4='C09BA03' .
If (dmatc5='C02LM03') dmatc5='C09BA03' .
If (dmatc6='C02LM03') dmatc6='C09BA03' .
If (dmatc7='C02LM03') dmatc7='C09BA03' .
If (dmatc8='C02LM03') dmatc8='C09BA03' .
EXECUTE.

*hyzaarC09CX   --> C09DA01.
If (dmatc1='C09CX') dmatc1='C09DA01' .
If (dmatc2='C09CX') dmatc2='C09DA01' .
If (dmatc3='C09CX') dmatc3='C09DA01' .
If (dmatc4='C09CX') dmatc4='C09DA01' .
If (dmatc5='C09CX') dmatc5='C09DA01' .
If (dmatc6='C09CX') dmatc6='C09DA01' .
If (dmatc7='C09CX') dmatc7='C09DA01' .
If (dmatc8='C09CX') dmatc8='C09DA01' .
EXECUTE.

*acuzide       C09AX   --> C09BA06.
If (dmatc1='C09AX' and dmmed1='acuzide') dmatc1='C09BA06' .
If (dmatc2='C09AX' and dmmed2='acuzide') dmatc2='C09BA06' .
If (dmatc3='C09AX' and dmmed3='acuzide') dmatc3='C09BA06' .
If (dmatc4='C09AX' and dmmed4='acuzide') dmatc4='C09BA06' .
If (dmatc5='C09AX' and dmmed5='acuzide') dmatc5='C09BA06' .
If (dmatc6='C09AX' and dmmed6='acuzide') dmatc6='C09BA06' .
If (dmatc7='C09AX' and dmmed7='acuzide') dmatc7='C09BA06' .
If (dmatc8='C09AX' and dmmed8='acuzide') dmatc8='C09BA06' .

*captopril/hydrochloorthiazide C09AX   C09BA01.
If (dmatc1='C09AX') dmatc1='C09BA01' .
If (dmatc2='C09AX') dmatc2='C09BA01' .
If (dmatc3='C09AX') dmatc3='C09BA01' .
If (dmatc4='C09AX') dmatc4='C09BA01' .
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If (dmatc5='C09AX') dmatc5='C09BA01' .
If (dmatc6='C09AX') dmatc6='C09BA01' .
If (dmatc7='C09AX') dmatc7='C09BA01' .
If (dmatc8='C09AX') dmatc8='C09BA01' .
EXECUTE.

*captopril        C09AP01        C09AA01.
If (dmatc1='C09AP01') dmatc1='C09AA01' .
If (dmatc2='C09AP01') dmatc2='C09AA01' .
If (dmatc3='C09AP01') dmatc3='C09AA01' .
If (dmatc4='C09AP01') dmatc4='C09AA01' .
If (dmatc5='C09AP01') dmatc5='C09AA01' .
If (dmatc6='C09AP01') dmatc6='C09AA01' .
If (dmatc7='C09AP01') dmatc7='C09AA01' .
If (dmatc8='C09AP01') dmatc8='C09AA01' .
EXECUTE.

*C07.
*emcoretic       C07AB07       -> C07BB07.
If (dmatc1='C07AB07' and dmmed1='emcoretic') dmatc1='C07BB07' .
If (dmatc2='C07AB07' and dmmed2='emcoretic') dmatc2='C07BB07' .
If (dmatc3='C07AB07' and dmmed3='emcoretic') dmatc3='C07BB07' .
If (dmatc4='C07AB07' and dmmed4='emcoretic') dmatc4='C07BB07' .
If (dmatc5='C07AB07' and dmmed5='emcoretic') dmatc5='C07BB07' .
If (dmatc6='C07AB07' and dmmed6='emcoretic') dmatc6='C07BB07' .
If (dmatc7='C07AB07' and dmmed7='emcoretic') dmatc7='C07BB07' .
If (dmatc8='C07AB07' and dmmed8='emcoretic') dmatc8='C07BB07' .

*atenolol/chloortalidon       C07AB03       --> C07CB03.
If (dmatc1='C07AB03' and dmmed1='atenolol/chloortalidon') dmatc1='C07CB03' .
If (dmatc2='C07AB03' and dmmed2='atenolol/chloortalidon') dmatc2='C07CB03' .
If (dmatc3='C07AB03' and dmmed3='atenolol/chloortalidon') dmatc3='C07CB03' .
If (dmatc4='C07AB03' and dmmed4='atenolol/chloortalidon') dmatc4='C07CB03' .
If (dmatc5='C07AB03' and dmmed5='atenolol/chloortalidon') dmatc5='C07CB03' .
If (dmatc6='C07AB03' and dmmed6='atenolol/chloortalidon') dmatc6='C07CB03' .
If (dmatc7='C07AB03' and dmmed7='atenolol/chloortalidon') dmatc7='C07CB03' .
If (dmatc8='C07AB03' and dmmed8='atenolol/chloortalidon') dmatc8='C07CB03' .

*C08.
*CHANGED UNDER C02.

*C09.
*CHANGED UNDER C02.

*create a string variable that consists of the first 3 characters of the ATC code.
string d_3ATC1(a30).
COMPUTE d_3ATC1 = CHAR.SUBSTR(dmatc1,1,3) .
string d_3ATC2(a30).
COMPUTE d_3ATC2 = CHAR.SUBSTR(dmatc2,1,3) .
string d_3ATC3(a30).
COMPUTE d_3ATC3 = CHAR.SUBSTR(dmatc3,1,3) .
string d_3ATC4(a30).
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COMPUTE d_3ATC4 = CHAR.SUBSTR(dmatc4,1,3) .
string d_3ATC5(a30).
COMPUTE d_3ATC5 = CHAR.SUBSTR(dmatc5,1,3) .
string d_3ATC6(a30).
COMPUTE d_3ATC6 = CHAR.SUBSTR(dmatc6,1,3) .
string d_3ATC7(a30).
COMPUTE d_3ATC7 = CHAR.SUBSTR(dmatc7,1,3) .
string d_3ATC8(a30).
COMPUTE d_3ATC8 = CHAR.SUBSTR(dmatc8,1,3) .

*create a string variable that consists of the first 4 characters of the ATC code.
string d_4ATC1(a30).
COMPUTE d_4ATC1 = CHAR.SUBSTR(dmatc1,1,4) .
string d_4ATC2(a30).
COMPUTE d_4ATC2 = CHAR.SUBSTR(dmatc2,1,4) .
string d_4ATC3(a30).
COMPUTE d_4ATC3 = CHAR.SUBSTR(dmatc3,1,4) .
string d_4ATC4(a30).
COMPUTE d_4ATC4 = CHAR.SUBSTR(dmatc4,1,4) .
string d_4ATC5(a30).
COMPUTE d_4ATC5 = CHAR.SUBSTR(dmatc5,1,4) .
string d_4ATC6(a30).
COMPUTE d_4ATC6 = CHAR.SUBSTR(dmatc6,1,4) .
string d_4ATC7(a30).
COMPUTE d_4ATC7 = CHAR.SUBSTR(dmatc7,1,4) .
string d_4ATC8(a30).
COMPUTE d_4ATC8 = CHAR.SUBSTR(dmatc8,1,4) .

*create a string variable that consists of the first 5 characters of the ATC code.
string d_5ATC1(a30).
COMPUTE d_5ATC1 = CHAR.SUBSTR(dmatc1,1,5) .
string d_5ATC2(a30).
COMPUTE d_5ATC2 = CHAR.SUBSTR(dmatc2,1,5) .
string d_5ATC3(a30).
COMPUTE d_5ATC3 = CHAR.SUBSTR(dmatc3,1,5) .
string d_5ATC4(a30).
COMPUTE d_5ATC4 = CHAR.SUBSTR(dmatc4,1,5) .
string d_5ATC5(a30).
COMPUTE d_5ATC5 = CHAR.SUBSTR(dmatc5,1,5) .
string d_5ATC6(a30).
COMPUTE d_5ATC6 = CHAR.SUBSTR(dmatc6,1,5) .
string d_5ATC7(a30).
COMPUTE d_5ATC7 = CHAR.SUBSTR(dmatc7,1,5) .
string d_5ATC8(a30).
COMPUTE d_5ATC8 = CHAR.SUBSTR(dmatc8,1,5) .
EXECUTE.

*dmed_ino: no errors.
*dmed_ari no errors.
*med_ang no errors.

*med_diu: C03.
```

RECODE dmed_diu (ELSE=COPY) INTO dmed_diu_or.
VARIABLE LABELS dmed_diu_or 'origineel'.
EXECUTE.
RECODE dmed_diu (ELSE=-3).
EXECUTE.
If (dmvar13 le -1) dmed_diu=-1.
If (dmvar13=2 or dmvar13=1) dmed_diu=0.
If (d_4ATC1='C03' OR d_3ATC2='C03' OR d_3ATC3='C03' OR d_3ATC4='C03' OR d_3ATC5='C03' OR
d_3ATC6='C03' OR d_3ATC7='C03' OR d_3ATC8='C03') dmed_diu=1.
EXECUTE.

*some diuretics are combination preps and therefore (incorrectly) not included in the diuretics
variable.
*C07B C07C C07D C02L C09BA C08G .
If (d_4ATC1='C07B' OR d_4ATC2='C07B' OR d_4ATC3='C07B' OR d_4ATC4='C07B' OR d_4ATC5='C07B'
OR d_4ATC6='C07B' OR
d_4ATC7='C07B' OR d_4ATC8='C07B') dmed_diu=1.
If (d_4ATC1='C07C' OR d_4ATC2='C07C' OR d_4ATC3='C07C' OR d_4ATC4='C07C' OR d_4ATC5='C07C'
OR d_4ATC6='C07C' OR
d_4ATC7='C07C' OR d_4ATC8='C07C') dmed_diu=1.
If (d_4ATC1='C07D' OR d_4ATC2='C07D' OR d_4ATC3='C07D' OR d_4ATC4='C07D' OR
d_4ATC5='C07D' OR d_4ATC6='C07D' OR
d_4ATC7='C07D' OR d_4ATC8='C07D') dmed_diu=1.
If (d_4ATC1='C02L' OR d_4ATC2='C02L' OR d_4ATC3='C02L' OR d_4ATC4='C02L' OR d_4ATC5='C02L'
OR d_4ATC6='C02L' OR
d_4ATC7='C02L' OR d_4ATC8='C02L') dmed_diu=1.
If (d_5ATC1='C09BA' OR d_5ATC2='C09BA' OR d_5ATC3='C09BA' OR d_5ATC4='C09BA' OR
d_5ATC5='C09BA' OR d_5ATC6='C09BA' OR d_5ATC7='C09BA' OR d_5ATC8='C09BA') imed_diu=1.
If (d_5ATC1='C09DA' OR d_5ATC2='C09DA' OR d_5ATC3='C09DA' OR d_5ATC4='C09DA' OR
d_5ATC5='C09DA' OR d_5ATC6='C09DA' OR d_5ATC7='C09DA' OR d_5ATC8='C09DA') imed_diu=1.
If (d_4ATC1='C08G' OR d_4ATC2='C08G' OR d_4ATC3='C08G' OR d_4ATC4='C08G' OR
d_4ATC5='C08G' OR d_4ATC6='C08G' OR d_4ATC7='C08G' OR d_4ATC8='C08G') imed_diu=1.
EXECUTE.

*med_hyp: C02 C07 C08 C09.
RECODE dmed_hyp (ELSE=COPY) INTO dmed_hyp_or.
VARIABLE LABELS dmed_hyp_or 'origineel'.
EXECUTE.
RECODE dmed_hyp (ELSE=-3).
EXECUTE.
If (dmvar13 le -1) dmed_hyp=-1.
If (dmvar13=2 or dmvar13=1) dmed_hyp=0.
If (d_3ATC1='C02' OR d_3ATC2='C02' OR d_3ATC3='C02' OR d_3ATC4='C02' OR d_3ATC5='C02' OR
d_3ATC6='C02' OR d_3ATC7='C02' OR d_3ATC8='C02') dmed_hyp=1.
If (d_3ATC1='C07' OR d_3ATC2='C07' OR d_3ATC3='C07' OR d_3ATC4='C07' OR d_3ATC5='C07' OR
d_3ATC6='C07' OR d_3ATC7='C07' OR d_3ATC8='C07') dmed_hyp=1.
If (d_3ATC1='C08' OR d_3ATC2='C08' OR d_3ATC3='C08' OR d_3ATC4='C08' OR d_3ATC5='C08' OR
d_3ATC6='C08' OR d_3ATC7='C08' OR d_3ATC8='C08') dmed_hyp=1.
If (d_3ATC1='C09' OR d_3ATC2='C09' OR d_3ATC3='C09' OR d_3ATC4='C09' OR d_3ATC5='C09' OR
d_3ATC6='C09' OR d_3ATC7='C09' OR d_3ATC8='C09') dmed_hyp=1.
EXECUTE.

```
*create a variable: use of anticoagulant drugs (vitamine K antagonists, DOACs, dabigatran (atc codes
B01AA, B01AF, B01AE)) yes/no.
compute dmed_stolling=0.
If (dmvar13 le -1) dmed_stolling=-1.
If (d_5ATC1='B01AA' OR d_5ATC2='B01AA' OR d_5ATC3='B01AA' OR d_5ATC4='B01AA' OR
d_5ATC5='B01AA' OR d_5ATC6='B01AA' OR
d_5ATC7='B01AA' OR d_5ATC8='B01AA') dmed_stolling=1.
If (d_5ATC1='B01AF' OR d_5ATC2='B01AF' OR d_5ATC3='B01AF' OR d_5ATC4='B01AF' OR
d_5ATC5='B01AF' OR d_5ATC6='B01AF' OR
d_5ATC7='B01AF' OR d_5ATC8='B01AF') dmed_stolling=1.
If (d_5ATC1='B01AE' OR d_5ATC2='B01AE' OR d_5ATC3='B01AE' OR d_5ATC4='B01AE' OR
d_5ATC5='B01AE' OR d_5ATC6='B01AE' OR
d_5ATC7='B01AE' OR d_5ATC8='B01AE') dmed_stolling=1.
VARIABLE LABELS dmed_stolling 'use of anticoagulants'.
VALUE LABELS  dmed_stolling
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*create a variable: use of beta blocking agents (atc code C07, thus includes combination preparaten)
yes/no.
compute dmed_beta=0.
If (dmvar13 le -1) dmed_beta=-1.
If (d_3ATC1='C07' OR d_3ATC2='C07' OR d_3ATC3='C07' OR d_3ATC4='C07' OR d_3ATC5='C07' OR
d_3ATC6='C07' OR
d_3ATC7='C07' OR d_3ATC8='C07') dmed_beta=1.
VARIABLE LABELS dmed_beta 'use of beta blocking agents'.
VALUE LABELS  dmed_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*combining anticoagulants and betablocking agents: use of both, yes/no.
compute dmed_stol_beta=-3.
If (dmed_stolling=-1) dmed_stol_beta=-1.
If (dmed_stolling=1 and dmed_beta=1) dmed_stol_beta=1.
If (dmed_stolling=0 or dmed_beta=0) dmed_stol_beta=0.
VARIABLE LABELS dmed_stol_beta 'use of both beta blocking agent AND anticoagulantia'.
VALUE LABELS  dmed_stol_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

********************year of interview (1995 or 1996).
COMPUTE t4_year=XDATE.YEAR(t4_dat).
VARIABLE LABELS t4_year "LASA main interview year (w4)".
VARIABLE LEVEL t4_year(SCALE).
FORMATS t4_year(F8.0).
VARIABLE WIDTH t4_year(8).
```

EXECUTE.

*********************ARRHYTHMIA (ARI) at D********************.
*Selfreport surgery implantation of pacemaker.
COMPUTE d_surARI=-3.
IF (dhart15d le -1) d_surARI=-1.
IF (dhart01 le -1) d_surARI=-1.
IF (dhart15 le -1) d_surARI=-1.
IF (dhart01=0 or dhart01=1) d_surARI=0.
IF (dhart15d=0) d_surARI=0.
IF (dhart15=1) d_surARI=0.
IF (dhart15d=1) d_surARI=1.
VARIABLE LABELS d_surARI 'self report surgery: pacemaker'.
VALUE LABELS d_surARI
        -1 'missing'
        0 'no'
        1 'yes'.

*use of anti arrythmic medication.
RECODE dmed_ARI (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO d_mARI.
IF (dmed_ino=1) d_mARI=1.
IF (dmvar13=1) d_mARI=0.
IF (dmvar13 le -1) d_mARI=-1.
VARIABLE LABELS d_mARI 'use of antiarrhythmics'.
VALUE LABELS d_mARI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of ARI.
COMPUTE d_gpARI=-3.
IF (cgarrth=1 and cgarrty le -1) d_gpARI=2.
IF (cgarrth le -1) d_gpARI=-1.
IF (cgarrth=0) d_gpARI=0.
IF (cgarrth=1 and cgarrty=9 and t4_year=1998) d_gpARI=0.
IF (cgarrth=1 and cgarrty ge 10) d_gpARI=0.
IF (cgarrth=1 and cgarrty=9 and t4_YEAR=1999) d_gpARI=1.
IF (cgarrth=1 and (cgarrty ge 0 and cgarrty le 8)) d_gpARI=1.
IF (t4_year le -1) d_gpARI=-2.
If (d_gpARI=-1 AND egarrth=0) d_gpARI=0.
If (d_gpARI=-1 AND egarrth=1 AND egarrty ge 2) d_gpARI=0.
If (d_gpARI=-1 AND egarrth=1 AND egarrty le 1) d_gpARI=2.
If (d_gpARI=-1 AND fgarrth=0) d_gpARI=0.
If (d_gpARI=-1 AND fgarrth=1 AND fgarrthy ge 2) d_gpARI=0.
If (d_gpARI=-1 AND fgarrth=1 AND fgarrthy le 1) d_gpARI=2.
If (d_gpARI=-1 AND hgarrth=0) d_gpARI=0.
If (d_gpARI=-1 AND hgarrth=1 AND hgarrthy ge 2) d_gpARI=0.
If (d_gpARI=-1 AND hgarrth=1 AND hgarrthy le 1) d_gpARI=2.
VARIABLE LABELS d_gpARI 'gp diagnosis: cardiac arrhythmia'.
VALUE LABELS d_gpARI
        -2 'dropout'
        -1 'missing'

      0 'no'
      1 'yes'
      2 'diagnose = yes, but year = missing'.

*ARI algorithm: medication, GP diagnosis and SR implantation of pacemaker combined.
compute d_alg_ARI=-3.
IF (d_mARI=1) d_alg_ARI=1.
IF (d_mARI=0 and d_gpARI=1 and (dmed_stol_beta=1)) d_alg_ARI=1.
IF (d_mARI=0 and d_gpARI=1 and (dmed_stol_beta=0) and cgarrths=1) d_alg_ARI=1.
IF (d_mARI=0 and d_gpARI=1 and (dmed_stol_beta=0) and cgarrths le 0 and d_surARI=1)
d_alg_ARI=1.
IF (d_mARI=0 and d_gpARI=1 and (dmed_stol_beta=0) and cgarrths le 0 and d_surARI le 0)
d_alg_ARI=2.
IF (d_mARI=0 and d_gpARI=0 and d_surARI=1) d_alg_ARI=3.
IF (d_mARI=0 and d_gpARI=0 and d_surARI le 0) d_alg_ARI=0.
IF (d_mARI=0 and d_gpARI=2 and (dmed_stol_beta=1)) d_alg_ARI=1.
IF (d_mARI=0 and d_gpARI=2 and (dmed_stol_beta=0) and d_surARI=1) d_alg_ARI=1.
IF (d_mARI=0 and d_gpARI=2 and (dmed_stol_beta=0) and d_surARI le 0) d_alg_ARI=0.
IF (d_mARI=0 and d_gpARI=2 and (dmed_stol_beta=0) and d_surARI le -1) d_alg_ARI=0.
IF (d_mARI=0 and d_gpARI=-1 and d_surARI=1) d_alg_ARI=2.
IF (d_mARI=0 and d_gpARI=-1 and (dmed_stol_beta=0) and d_surARI=0) d_alg_ARI=0.
IF (d_mARI=0 and d_gpARI=-1 and (dmed_stol_beta=0) and d_surARI le -1) d_alg_ARI=-1.
IF (d_mARI=0 and d_gpARI=-1 and (dmed_stol_beta=1) and d_surARI le 0) d_alg_ARI=-1.
IF (d_mARI le -1 and d_gpARI=1 and cgarrths=1) d_alg_ARI=1.
IF (d_mARI le -1 and d_gpARI=1 and cgarrths le 0 and d_surARI=1) d_alg_ARI=1.
IF (d_mARI le -1 and d_gpARI=1 and cgarrths le 0 and d_surARI le 0) d_alg_ARI=2.
IF (d_mARI le -1 and d_gpARI=0 and d_surARI=1) d_alg_ARI=3.
IF (d_mARI le -1 and d_gpARI=0 and d_surARI le 0) d_alg_ARI=0.
IF (d_mARI le -1 and d_gpARI=2 and d_surARI=1) d_alg_ARI=1.
IF (d_mARI le -1 and d_gpARI=2 and d_surARI le 0) d_alg_ARI=-1.
IF (d_mARI le -1 and d_gpARI le -1 and d_surARI=1) d_alg_ARI=2.
IF (d_mARI le -1 and d_gpARI le -1 and d_surARI le 0) d_alg_ARI=-1.
IF (d_alg_ARI=-1 and (dtrhart1=0 or dtphart1=0)) d_alg_ARI=0.
VARIABLE LABELS d_alg_ARI 'D wave: arrythmia'.
VALUE LABELS d_alg_ARI
      -1 'missing'
      0 'no'
      1 'definite'
      2 'possible'
      3 'contradictory'.

*********************CEREBROVASCULAR ACCIDENT (CVA) at D*******************.
*Selfreport diagnosis of CVA.
COMPUTE d_srCVA=-3.
IF (dcva01=2 or dcva01=3) d_srCVA=1.
IF (dcva01=0 or dcva01=1) d_srCVA=0.
IF (dtpcva01=1) d_srCVA=1.
IF (dtpcva01=0) d_srCVA=0.
IF (dtrcva01=1) d_srCVA=1.
IF (dtrcva01=0) d_srCVA=0.
IF (dcva01 le -1 and dtpcva01 le -1 and dtrcva01 le -1) d_srCVA=-1.
VARIABLE LABELS d_srCVA 'self report: CVA'.

VALUE LABELS d_srCVA
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CVA.
COMPUTE d_gpCVA=-3.
IF (cgcva le -1) d_gpCVA=-1.
IF (cgcva=1 and cgcvay ge 10) d_gpCVA=0.
IF (cgcva=0) d_gpCVA=0.
IF (cgcva=1 and cgcvay=9 and t4_year=1998) d_gpCVA=0.
IF (cgcva=1 and cgcvay le -1) d_gpCVA=2.
IF (cgcva=1 and (cgcvay=9 and t4_YEAR=1999.0)) d_gpCVA=1.
IF (cgcva=1 and (cgcvay ge 1 and cgcvay le 8)) d_gpCVA=1.
IF (bgcva=1) d_gpCVA=1.
If (d_gpCVA=-1 AND egcva=0) d_gpCVA=0.
If (d_gpCVA=-1 AND egcva=1 AND egcvay ge 2) d_gpCVA=0.
If (d_gpCVA=-1 AND egcva=1 AND egcvay le 1) d_gpCVA=2.
If (d_gpCVA=-1 AND fgcva=0) d_gpCVA=0.
If (d_gpCVA=-1 AND fgcva=1 AND fgcvay ge 2) d_gpCVA=0.
If (d_gpCVA=-1 AND fgcva=1 AND fgcvay le 1) d_gpCVA=2.
If (d_gpCVA=-1 AND hgcva=0) d_gpCVA=0.
If (d_gpCVA=-1 AND hgcva=1 AND hgcvay ge 2) d_gpCVA=0.
If (d_gpCVA=-1 AND hgcva=1 AND hgcvay le 1) d_gpCVA=2.
VARIABLE LABELS d_gpCVA 'gp diagnosis: CVA'.
VALUE LABELS d_gpCVA
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CVA algorithm: GP diagnosis and SR combined.
COMPUTE d_alg_CVA=-3.
IF (d_gpCVA=1 and cgcvas=1) d_alg_CVA=1.
IF (d_gpCVA=1 and cgcvas le 0 and d_srCVA=1) d_alg_CVA=1.
IF (d_gpCVA=1 and cgcvas le 0 and d_srCVA=0) d_alg_CVA=3.
IF (d_gpCVA=1 and cgcvas le 0 and d_srCVA le -1) d_alg_CVA=2.
IF (d_gpCVA=0 and d_srCVA=1) d_alg_CVA=3.
IF (d_gpCVA=0 and d_srCVA=0) d_alg_CVA=0.
IF (d_gpCVA=0 and d_srCVA le -1) d_alg_CVA=0.
IF (d_gpCVA=2 and d_srCVA=1) d_alg_CVA=1.
IF (d_gpCVA=2 and d_srCVA=0) d_alg_CVA=0.
IF (d_gpCVA=2 and d_srCVA le -1) d_alg_CVA=-1.
IF (d_gpCVA le -1 and d_srCVA=1) d_alg_CVA=2.
IF (d_gpCVA le -1 and d_srCVA=0) d_alg_CVA=0.
IF (d_gpCVA le -1 and d_srCVA le -1) d_alg_CVA=-1.
VARIABLE LABELS d_alg_CVA 'D wave: cerebrovascular accident'.
VALUE LABELS d_alg_CVA
        -1 'missing'
        0 'no'
        1 'definite'

2 'possible'
        3 'contradictory'.

*********************MYOCARDIAL INFARCTION (MI) at D********************.
*Selfreport diagnosis of MI.
COMPUTE d_srMI=-5.
IF (dhart01 le -1) d_srMI=-1.
IF ((dhart01=2 or dhart01=3) and dhart05 le -1) d_srMI=-1.
IF (dhart05=1) d_srMI=0.
IF (dhart01=0 or dhart01=1) d_srMI=0.
IF (dhart05=2) d_srMI=1.
IF (dtphart1=0 or dtrhart1=0) d_srMI=0.
VARIABLE LABELS d_srMI 'self report: myocardial infarction'.
VALUE LABELS d_srMI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of MI.
COMPUTE d_gpMI=-3.
IF (cgmi=1 and cgmiy le -1) d_gpMI=2.
IF (cgmi le -1) d_gpMI=-1.
IF (cgmi=0) d_gpMI=0.
IF (cgmi=1 and cgmiy=9 and t4_year=1998) d_gpMI=0.
IF (cgmi=1 and cgmiy ge 10) d_gpMI=0.
IF (cgmi=1 and cgmiy=9 and t4_YEAR=1999) d_gpMI=1.
IF (cgmi=1 and (cgmiy ge 0 and cgmiy le 8)) d_gpMI=1.
IF (t4_year le -1) d_gpMI=-2.
If (d_gpmi=-1 AND egmi=0) d_gpmi=0.
If (d_gpmi=-1 AND egmi=1 AND egmiy ge 2) d_gpmi=0.
If (d_gpmi=-1 AND egmi=1 AND egmiy le 1) d_gpmi=2.
If (d_gpmi=-1 AND fgmi=0) d_gpmi=0.
If (d_gpmi=-1 AND fgmi=1 AND fgmiy ge 2) d_gpmi=0.
If (d_gpmi=-1 AND fgmi=1 AND fgmiy le 1) d_gpmi=2.
If (d_gpmi=-1 AND hgmi=0) d_gpmi=0.
If (d_gpmi=-1 AND hgmi=1 AND hgmiy ge 2) d_gpmi=0.
If (d_gpmi=-1 AND hgmi=1 AND hgmiy le 1) d_gpmi=2.
VARIABLE LABELS d_gpMI 'gp diagnosis: MI'.
VALUE LABELS d_gpMI
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*MI algorithm: GP diagnosis and SR combined.
COMPUTE d_alg_MI=-3.
IF (d_gpMI=1 and cgmis=1) d_alg_MI=1.
IF (d_gpMI=1 and cgmis le 0 and d_srMI=1) d_alg_MI=1.
IF (d_gpMI=1 and cgmis le 0 and d_srMI=0) d_alg_MI=3.
IF (d_gpMI=1 and cgmis le 0 and d_srMI le -1) d_alg_MI=2.

IF (d_gpMI=0 and d_srMI=1) d_alg_MI=3.
IF (d_gpMI=0 and d_srMI=0) d_alg_MI=0.
IF (d_gpMI=0 and d_srMI le -1) d_alg_MI=0.
IF (d_gpMI=2 and d_srMI=1) d_alg_MI=1.
IF (d_gpMI=2 and d_srMI=0) d_alg_MI=0.
IF (d_gpMI=2 and d_srMI le -1) d_alg_MI=-1.
IF (d_gpMI le -1 and d_srMI=1) d_alg_MI=2.
IF (d_gpMI le -1 and d_srMI=0) d_alg_MI=0.
IF (d_gpMI le -1 and d_srMI le -1) d_alg_MI=-1.
VARIABLE LABELS d_alg_MI 'D wave: myocardial infarction'.
VALUE LABELS d_alg_MI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************ANGINA PECTORIS (AP) at D*********************.
*Selfreport diagnosis of AP.
COMPUTE d_srAP=-5.
IF (dhart01 le -1) d_srAP=-1.
IF ((dhart01=2 or dhart01=3) and dhart10 le -1) d_srAP=-1.
IF (dhart01=0 or dhart01=1) d_srAP=0.
IF (dhart11=1 or ddiabe12=1) d_srAP=0.
if (((dhart01=2 or dhart01=3) and dhart10=1) OR ((ddiabe01=2 or ddiabe01=3) and ddiabe11=1))
d_srAP=0.
IF (((dhart01=2 or dhart01=3) and dhart10 ge 4) OR ((ddiabe01=2 or ddiabe01=3) and ddiabe11 ge 4))
d_srAP=0.
IF (((dhart01=2 or dhart01=3) and dhart10=2 and dhart11 le -1) OR ((ddiabe01=2 or ddiabe01=3) and
ddiabe11=2 and ddiabe12 le -1)) d_srAP=2.
IF (dhart11=2 or ddiabe12=2) d_srAP=1.
IF (dhart10=3 or ddiabe11=3) d_srAP=1.
IF (dtphart1=0 or dtrhart1=0) d_srAP=0.
VARIABLE LABELS d_srAP 'self report: angina pectoris'.
VALUE LABELS d_srAP
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of AP.
COMPUTE d_gpAP=-3.
IF (cgap=1 and cgapy le -1) d_gpAP=2.
IF (cgap le -1) d_gpAP=-1.
IF (cgap=0) d_gpAP=0.
IF (cgap=1 and cgapy=9 and t4_year=1998) d_gpAP=0.
IF (cgap=1 and cgapy ge 10) d_gpAP=0.
IF (cgap=1 and cgapy=9 and t4_YEAR=1999) d_gpAP=1.
IF (cgap=1 and (cgapy ge 0 and cgapy le 8)) d_gpAP=1.
IF (t4_year le -1) d_gpAP=-2.
If (d_gpap=-1 AND egap=0) d_gpap=0.

If (d_gpap=-1 AND egap=1 AND egapy ge 2) d_gpap=0.
If (d_gpap=-1 AND egap=1 AND egapy le 1) d_gpap=2.
If (d_gpap=-1 AND fgap=0) d_gpap=0.
If (d_gpap=-1 AND fgap=1 AND fgapy ge 2) d_gpap=0.
If (d_gpap=-1 AND fgap=1 AND fgapy le 1) d_gpap=2.
If (d_gpap=-1 AND hgap=0) d_gpap=0.
If (d_gpap=-1 AND hgap=1 AND hgapy ge 2) d_gpap=0.
If (d_gpap=-1 AND hgap=1 AND hgapy le 1) d_gpap=2.
VARIABLE LABELS d_gpAP 'gp diagnosis: angina pectoris'.
VALUE LABELS d_gpAP
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*use of AP medication: nitrates.
RECODE dmed_ang (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO d_mAP.
IF (dmvar13 le -1) d_mAP=-1.
IF (dmvar13=1) d_mAP=0.
VARIABLE LABELS d_mAP 'use of nitratess'.
VALUE LABELS d_mAP
        -1 'missing'
        0 'no'
        1 'yes'.

*AP algorithm: medication, GP diagnosis and SR combined.
COMPUTE d_alg_AP=-3.
IF (d_mAP=1) d_alg_AP=1.
IF (d_mAP le 0 and d_srAP=1 and d_gpAP=1) d_alg_AP=1.
IF (d_mAP le 0 and d_srAP=1 and d_gpAP=0) d_alg_AP=3.
IF (d_mAP le 0 and d_srAP=1 and d_gpap=2) d_alg_AP=1.
IF (d_mAP le 0 and d_srAP=1 and d_gpAP le -1) d_alg_AP=2.
IF (d_mAP le 0 and d_srAP=0 and d_gpAP=1 and cgaps=1) d_alg_AP=1.
IF (d_mAP le 0 and d_srAP=0 and d_gpAP=1 and cgaps le 0) d_alg_AP=3.
IF (d_mAP le 0 and d_srAP=0 and d_gpAP=0) d_alg_AP=0.
IF (d_mAP le 0 and d_srAP=0 and d_gpap=2) d_alg_AP=0.
IF (d_mAP le 0 and d_srAP=0 and d_gpAP le -1) d_alg_AP=0.
IF (d_mAP le 0 and d_srAP=2 and d_gpAP=1) d_alg_AP=1.
IF (d_mAP le 0 and d_srAP=2 and d_gpAP=0) d_alg_AP=0.
IF (d_mAP le 0 and d_srAP=2 and d_gpAP=2) d_alg_AP=-1.
IF (d_mAP le 0 and d_srAP=2 and d_gpap=-1) d_alg_AP=-1.
IF (d_mAP le 0 and d_srAP le -1 and d_gpAP=1 and cgaps=1) d_alg_AP=1.
IF (d_mAP le 0 and d_srAP le -1 and d_gpAP=1 and cgaps le 0) d_alg_AP=2.
IF (d_mAP le 0 and d_srAP le -1 and d_gpAP=0) d_alg_AP=0.
IF (d_mAP le 0 and d_srAP le -1 and d_gpap=2) d_alg_AP=-1.
IF (d_mAP le 0 and d_srAP le -1 and d_gpAP le -1) d_alg_AP=-1.
VARIABLE LABELS d_alg_AP 'D wave: angina pectoris'.
VALUE LABELS d_alg_AP
        -1 'missing'
        0 'no'
        1 'definite'

2 'possible'
3 'contradictory'.

********************CONGESTIVE HEART FAILURE (CHF) at D********************.
*Selfreport diagnosis of CHF.
COMPUTE d_srCHF=-3.
IF (dhart01 le -1) d_srCHF=-1.
IF ((dhart01=2 or dhart01=3) and dhart12 le -1) d_srCHF=-1.
IF (dhart01=0 or dhart01=1) d_srCHF=0.
IF ((dhart01=2 or dhart01=3) and dhart12=1) d_srCHF=0.
IF ((dhart01=2 or dhart01=3) and dhart12=2) d_srCHF=1.
IF (dtphart1=0 or dtrhart1=0) d_srCHF=0.
VARIABLE LABELS d_srCHF 'self reported diagnosis of congestive heart failure'.
VALUE LABELS d_srCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CHF.
COMPUTE d_gpCHF=-3.
IF (cgchf=1 and cgchfy le -1) d_gpCHF=2.
IF (cgchf le -1) d_gpCHF=-1.
IF (cgchf=0) d_gpCHF=0.
IF (cgchf=1 and cgchfy=9 and t4_year=1998) d_gpCHF=0.
IF (cgchf=1 and cgchfy ge 10) d_gpCHF=0.
IF (cgchf=1 and cgchfy=9 and t4_YEAR=1999) d_gpCHF=1.
IF (cgchf=1 and (cgchfy ge 0 and cgchfy le 8)) d_gpCHF=1.
IF (t4_year le -1) d_gpCHF=-2.
If (d_gpchf=-1 AND egchf=0) d_gpchf=0.
If (d_gpchf=-1 AND egchf=1 AND egchfy ge 2) d_gpchf=0.
If (d_gpchf=-1 AND egchf=1 AND egchfy le 1) d_gpchf=2.
If (d_gpchf=-1 AND fgchf=0) d_gpchf=0.
If (d_gpchf=-1 AND fgchf=1 AND fgchfy ge 2) d_gpchf=0.
If (d_gpchf=-1 AND fgchf=1 AND fgchfy le 1) d_gpchf=2.
If (d_gpchf=-1 AND hgchf=0) d_gpchf=0.
If (d_gpchf=-1 AND hgchf=1 AND hgchfy ge 2) d_gpchf=0.
If (d_gpchf=-1 AND hgchf=1 AND hgchfy le 1) d_gpchf=2.
VARIABLE LABELS d_gpCHF 'gp diagnosis: congestive heart failure'.
VALUE LABELS d_gpCHF
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CHF medication: diuretics, antihypertensives, nitrates, inotropics, beta blocking agents.
compute d_mCHF=0.
if (dmed_diu=1 and (dmed_hyp=1 or dmed_ang=1 or dmed_ino=1 or dmed_beta=1)) d_mCHF=1.
IF (dmvar13 le -1) d_mCHF=-1.
IF (dmvar13=1) d_mCHF=0.
VARIABLE LABELS d_mCHF 'medication for congestive heart failure'.
VALUE LABELS d_mCHF

-1 'missing'
            0 'no'
            1 'yes'.

*CHF algorithm: medication, GP diagnosis and SR combined.
COMPUTE d_alg_CHF=-3.
IF (d_gpCHF=1 and cgchfs=1) d_alg_CHF=1.
IF (d_gpCHF=1 and cgchfs le 0 and d_srCHF=1) d_alg_CHF=1.
IF (d_gpCHF=1 and cgchfs le 0 and d_srCHF le 0 and d_mCHF=1) d_alg_CHF=1.
IF (d_gpCHF=1 and cgchfs le 0 and d_srCHF=0 and d_mCHF=0) d_alg_CHF=2.
IF (d_gpCHF=1 and cgchfs le 0 and d_srCHF le 0 and d_mCHF le -1) d_alg_CHF=2.
IF (d_gpCHF=1 and cgchfs le 0 and d_srCHF le -1 and d_mCHF le 0) d_alg_CHF=2.
IF (d_gpCHF=0 and d_srCHF=1 and d_mCHF=1) d_alg_CHF=1.
IF (d_gpCHF=0 and d_srCHF=1 and d_mCHF le 0) d_alg_CHF=2.
IF (d_gpCHF=0 and d_srCHF le 0 and d_mCHF=1) d_alg_CHF=3.
IF (d_gpCHF=0 and d_srCHF le 0 and d_mCHF le 0) d_alg_CHF=0.
IF (d_gpCHF=2 and d_srCHF=1) d_alg_CHF=1.
IF (d_gpCHF=2 and d_srCHF le 0 and d_mCHF=1) d_alg_CHF=1.
IF (d_gpCHF=2 and d_srCHF le 0 and d_mCHF le 0) d_alg_CHF=0.
IF (d_gpCHF=2 and d_srCHF=0 and d_mCHF=-1) d_alg_CHF=-1.
IF (d_gpCHF=2 and d_srCHF le -1 and d_mCHF le -1) d_alg_CHF=-1.
IF (d_gpCHF le -1 and d_srCHF=1 and d_mCHF=1) d_alg_CHF=1.
IF (d_gpCHF le -1 and d_srCHF=1 and d_mCHF le 0) d_alg_CHF=2.
IF (d_gpCHF le -1 and d_srCHF=0 and d_mCHF=1) d_alg_CHF=2.
IF (d_gpCHF le -1 and d_srCHF=0 and d_mCHF le 0) d_alg_CHF=0.
IF (d_gpCHF le -1 and d_srCHF le -1 and d_mCHF=1) d_alg_CHF=2.
IF (d_gpCHF le -1 and d_srCHF le -1 and d_mCHF=0) d_alg_CHF=0.
IF (d_gpCHF le -1 and d_srCHF le -1 and d_mCHF le -1) d_alg_CHF=-1.
VARIABLE LABELS d_alg_CHF 'D wave: congestive heart failure'.
VALUE LABELS d_alg_CHF
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'.

*********************PERIPHERAL ARTERIAL DISEASE (PAD) at D*********************.
*Selfreport diagnosis of PAD.
COMPUTE d_srPAD=-5.
IF (dartvei1 le -1) d_srPAD=-1.
IF ((dartvei1=2 or dartvei1=3) and dartvei5 le -1) d_srPAD=-1.
IF (dartvei1=0 or dartvei1=1) d_srPAD=0.
IF (dartvei7=1 or ddiabe09=1) d_srPAD=0.
IF (dartvei5=1 or ddiabe07=1) d_srPAD=0.
IF ((dartvei5=2 and dartvei7 le -1) or (ddiabe07=2 and ddiabe09 le -1)) d_srPAD=2.
IF (dartvei7=2 or ddiabe09=2) d_srPAD=1.
IF (dtpartv1=0 OR dtrartv1=0) d_srPAD=0.
IF (dtpartv1=1 OR dtrartv1=1) d_srPAD=2.
IF (dartvei1 le -1 and dtpartv1 le -1 and dtrartv1 le -1) d_srPAD=-1.
VARIABLE LABELS d_srPAD 'self reported diagnosis of peripheral artery disease'.
VALUE LABELS d_srPAD
            -1 'missing'

0 'no'
    1 'yes'
    2 'possible'.

*Selfreport surgery.
COMPUTE d_surPAD=-3.
IF (dartvei1 le -1) d_surPAD=-1.
IF ((dartvei1=2 or dartvei1=3) and dartve8 le -1) d_surPAD=-1.
IF (dartve8=1) d_surPAD=0.
IF ((dartve8c=0 AND dartve8d=0) AND (dartve8b le 0)) d_surPAD=0.
IF (dartvei1=0 or dartvei1=1) d_surPAD=0.
IF ((dartve8c le 0 AND dartve8d le 0) AND (dartve8b=1)) d_surPAD=2.
IF (dartve8c=1 OR dartve8d=1) d_surPAD=1.
VARIABLE LABELS d_surPAD 'self reported surgery of peripheral arteries'.
VALUE LABELS d_surPAD
    -1 'missing'
    0 'no'
    1 'yes'
    2 'possible'.

*GP diagnosis of PAD.
COMPUTE d_gpPAD=-3.
IF (cgartvei le -1) d_gpPAD=-1.
IF (cgartvei=1 and cgartvey le -1) d_gpPAD=2.
IF (cgartvei=0) d_gpPAD=0.
IF (cgartvei=1 and cgartvey ge 10) d_gpPAD=0.
IF (cgartvei=1 and cgartvey=9 and t4_year=1998) d_gpPAD=0.
IF (cgartvei=1 and (cgartvey ge 1 and cgartvey le 8)) d_gpPAD=1.
IF (cgartvei=1 and (cgartvey=9 and t4_YEAR=1999.0)) d_gpPAD=1.
IF (bgclan=1) d_gpPAD=1.
IF (t4_year le -1) d_gpPAD=-2.
If (d_gpPAD=-1 AND egartvei=0) d_gpPAD=0.
If (d_gpPAD=-1 AND egartvei=1 AND egartvey ge 2) d_gpPAD=0.
If (d_gpPAD=-1 AND egartvei=1 AND egartvey le 1) d_gpPAD=2.
If (d_gpPAD=-1 AND fgartvei=0) d_gpPAD=0.
If (d_gpPAD=-1 AND fgartvei=1 AND fgartvey ge 2) d_gpPAD=0.
If (d_gpPAD=-1 AND fgartvei=1 AND fgartvey le 1) d_gpPAD=2.
If (d_gpPAD=-1 AND hgartvei=0) d_gpPAD=0.
If (d_gpPAD=-1 AND hgartvei=1 AND hgartvey ge 2) d_gpPAD=0.
If (d_gpPAD=-1 AND hgartvei=1 AND hgartvey le 1) d_gpPAD=2.
VARIABLE LABELS d_gpPAD 'gp diagnosis: PAD'.
VALUE LABELS d_gpPAD
    -2 'dropout'
    -1 'missing'
    0 'no'
    1 'yes'
    2 'diagnose = yes, but year = missing'.

*PAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE d_alg_PAD=-3.
IF (d_surPAD=1) d_alg_PAD=1.
IF (d_surPAD le 0 and d_gpPAD=1 and cgartves=1) d_alg_PAD=1.

IF (d_surPAD le 0 and d_gpPAD=1 and cgartves le 0 and d_srPAD=1) d_alg_PAD=1.
IF (d_surPAD le 0 and d_gpPAD=1 and cgartves le 0 and d_srPAD=0) d_alg_PAD=3.
IF (d_surPAD le 0 and d_gpPAD=1 and cgartves le 0 and d_srPAD le -1) d_alg_PAD=2.
IF (d_surPAD le 0 and d_gpPAD=1 and cgartves le 0 and d_srPAD=2) d_alg_PAD=1.
IF (d_surPAD le 0 and d_gpPAD=0 and d_srPAD=1) d_alg_PAD=3.
IF (d_surPAD le 0 and d_gpPAD=0 and d_srPAD=0) d_alg_PAD=0.
IF (d_surPAD le 0 and d_gpPAD=0 and d_srPAD le -1) d_alg_PAD=0.
IF (d_surPAD le 0 and d_gpPAD=0 and d_srPAD=2) d_alg_PAD=0.
IF (d_surPAD le 0 and d_gpPAD=2 and d_srPAD=1) d_alg_PAD=1.
IF (d_surPAD le 0 and d_gpPAD=2 and d_srPAD=0) d_alg_PAD=0.
IF (d_surPAD le 0 and d_gpPAD=2 and d_srPAD le -1) d_alg_PAD=-1.
IF (d_surPAD le 0 and d_gpPAD=2 and d_srPAD=2) d_alg_PAD=1.
IF (d_surPAD le 0 and d_gpPAD le -1 and d_srPAD=1) d_alg_PAD=2.
IF (d_surPAD le 0 and d_gpPAD le -1 and d_srPAD=0) d_alg_PAD=0.
IF (d_surPAD le 0 and d_gpPAD le -1 and d_srPAD le -1) d_alg_PAD=-1.
IF (d_surPAD le 0 and d_gpPAD le -1 and d_srPAD=2) d_alg_PAD=-1.
IF (d_surPAD=2 and d_gpPAD=1) d_alg_PAD=1.
IF (d_surPAD=2 and d_gpPAD=0 and d_srPAD=1) d_alg_PAD=1.
IF (d_surPAD=2 and d_gpPAD=0 and d_srPAD=0) d_alg_PAD=0.
IF (d_surPAD=2 and d_gpPAD=0 and d_srPAD le -1) d_alg_PAD=0.
IF (d_surPAD=2 and d_gpPAD=0 and d_srPAD=2) d_alg_PAD=3.
IF (d_surPAD=2 and d_gpPAD=2 and d_srPAD=1) d_alg_PAD=1.
IF (d_surPAD=2 and d_gpPAD le -1 and d_srPAD=1) d_alg_PAD=1.
IF (d_surPAD=2 and d_gpPAD le -1 and d_srPAD=0) d_alg_PAD=0.
IF (d_surPAD=2 and d_gpPAD le -1 and d_srPAD le -1) d_alg_PAD=-1.
IF (d_surPAD=2 and d_gpPAD le -1 and d_srPAD=2) d_alg_PAD=-1.
VARIABLE LABELS d_alg_PAD 'D wave algorithm: peripheral artery disease'.
VALUE LABELS d_alg_PAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

********************CORONARY ARTERY DISEASE (CAD) at D********************.
*CAD Selfreport surgery.
COMPUTE d_surCAD=-3.
IF ((dhart01=2 or dhart01=3) and dhart15 le -1) d_surCAD=-1.
IF (dhart01 le -1) d_surCAD=-1.
IF (dhart15b le -1 AND dhart15c le -1) d_surCAD=-1.
IF (dhart15b=0 AND dhart15c=0) d_surCAD=0.
IF (dhart15=1) d_surCAD=0.
IF (dhart01=0 or dhart01=1) d_surCAD=0.
IF (dhart15b=1 OR dhart15c=1) d_surCAD=1.
VARIABLE LABELS d_surCAD 'self reported surgery of coronary arteries'.
VALUE LABELS d_surCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*CAD selfreport (=Selfreport of AP or MI).
COMPUTE d_srCAD=-5.

IF (dhart01 le -1) d_srCAD=-1.
IF (d_srMI=0 AND d_srAP=2) d_srCAD=-1.
IF (d_srMI=0 AND d_srAP le -1) d_srCAD=-1.
IF (d_srMI le -1 AND d_srAP=0) d_srCAD=-1.
IF (d_srMI le -1 AND d_srAP=2) d_srCAD=-1.
IF (d_srMI le -1 AND d_srAP le -1) d_srCAD=-1.
IF (d_srMI=0 AND d_srAP=0) d_srCAD=0.
IF (dhart01=0 or dhart01=1) d_srCAD=0.
IF (d_srMI le -1 AND d_srAP=1) d_srCAD=1.
IF (d_srMI=1) d_srCAD=1.
IF (d_srAP=1) d_srCAD=1.
IF (dtphart1=0 or dtrhart1=0) d_srCAD=0.
VARIABLE LABELS d_srCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS d_srCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CAD (gp diagnosis of AP or MI).
COMPUTE d_gpCAD=-5.
IF (d_gpMI le -1 AND d_gpAP=0) d_gpCAD=-1.
IF (d_gpMI=0 AND d_gpAP le -1) d_gpCAD=-1.
IF (d_gpMI le -1 AND d_gpAP le -1) d_gpCAD=-1.
IF (d_gpMI=0 AND d_gpAP=0) d_gpCAD=0.
IF (d_gpMI=0 AND d_gpAP=2) d_gpCAD=2.
IF (d_gpMI le -1 AND d_gpAP=2) d_gpCAD=2.
IF (d_gpMI=2 AND d_gpAP=0) d_gpCAD=2.
IF (d_gpMI=2 AND d_gpAP=2) d_gpCAD=2.
IF (d_gpMI=2 AND d_gpAP le -1) d_gpCAD=2.
IF (d_gpMI=1) d_gpCAD=1.
IF (d_gpAP=1) d_gpCAD=1.
IF (t4_year le -1) d_gpCAD=-2.
VARIABLE LABELS d_gpCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS d_gpCAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE d_alg_CAD=-3.
IF (d_mAP le 0 and d_surCAD le 0 and d_srMI le 0 and (d_srAP le 0 or d_srAP=2) and d_gpMI le 0) d_alg_CAD=0.
IF (d_mAP le -1 and d_surCAD le -1 and d_srMI le -1 and d_srAP le -1 and d_gpAP le -1 and d_gpMI le -1) d_alg_CAD=-1.
IF (d_mAP=0 and d_surCAD=0 and d_srMI=0 and d_srAP=0 and d_gpAP=0 and d_gpMI=0) d_alg_CAD=0.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_srAP=1 and (d_srMI le 0 and d_gpAP le 0 and d_gpMI le 0))) d_alg_CAD=3.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_srMI=1 and (d_srAP le 0 and d_gpAP le 0 and d_gpMI le 0))) d_alg_CAD=3.

IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpAP=1 and cgaps le 0 and (d_gpMI le 0 or d_gpMI=2) and d_srAP le 0 and d_srMI le 0)) d_alg_CAD=3.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpMI=1 and cgmis le 0 and (d_gpAP le 0 or d_gpAP=2) and d_srAP le 0 and d_srMI le 0)) d_alg_CAD=3.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_srAP=1 and (d_srMI le -1 and d_gpAP le -1 and d_gpMI le -1))) d_alg_CAD=2.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_srMI=1 and (d_srAP le -1 and d_gpAP le -1 and d_gpMI le -1))) d_alg_CAD=2.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpAP=1 and cgaps le 0 and d_gpMI le -1 and d_srAP le -1 and d_srMI le -1)) d_alg_CAD=2.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpMI=1 and cgmis le 0 and d_gpAP le -1 and d_srAP le -1 and d_srMI le -1)) d_alg_CAD=2.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpAP=2 and (d_gpMI le 0 or d_gpMI=2) and (d_srAP le 0 or d_srAP=2) and d_srMI le 0)) d_alg_CAD=0.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpMI=2 and (d_gpAP le 0 or d_gpAP=2) and (d_srAP le 0 or d_srAP=2) and d_srMI le 0)) d_alg_CAD=0.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpAP=2 and (d_gpMI le -1 or d_gpMI=2) and (d_srAP le -1 or d_srAP=2) and d_srMI le -1)) d_alg_CAD=-1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpMI=2 and (d_gpAP le -1 or d_gpAP=2) and (d_srAP le -1 or d_srAP=2) and d_srMI le -1)) d_alg_CAD=-1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_srAP=1 and (d_srMI=1 OR d_gpAP=1 OR d_gpMI=1))) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_srMI=1 and (d_srAP=1 OR d_gpAP=1 OR d_gpMI=1))) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpAP=1 and cgaps=1)) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpMI=1 and cgmis=1)) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpAP=1 and cgaps le 0) and (d_srMI=1 or d_srAP=1 or d_gpMI=1)) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpMI=1 and cgmis le 0) and (d_srMI=1 or d_srAP=1 or d_gpAP=1)) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_srAP=1 and d_srMI le 0) and (d_gpAP=2 or d_gpMI=2)) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_srMI=1) and (d_gpAP=2 or d_srAP=2 or d_gpMI=2)) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpAP=1 and d_srMI le 0) and (d_srAP=2 and d_gpMI=2)) d_alg_CAD=1.
IF ((d_mAP le 0 and d_surCAD le 0) and (d_gpMI=1 and d_srMI le 0) and (d_gpAP=2 or d_srAP=2)) d_alg_CAD=1.
IF (d_mAP=1 or d_surCAD=1) d_alg_CAD=1.
VARIABLE LABELS d_alg_CAD 'D wave: coronary artery disease'.
VALUE LABELS d_alg_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************E wave****************.
*enalapril has the wrong ATC codes, change it to the correct code.
If (ematc1='C09BA02' and emmed1='enalaprilmaleaat') ematc1='C09AA02' .
If (ematc2='C09BA02' and emmed2='enalaprilmaleaat') ematc2='C09AA02' .
If (ematc3='C09BA02' and emmed3='enalaprilmaleaat') ematc3='C09AA02' .

If (ematc4='C09BA02' and emmed4='enalaprilmaleaat') ematc4='C09AA02' .
If (ematc5='C09BA02' and emmed5='enalaprilmaleaat') ematc5='C09AA02' .
If (ematc6='C09BA02' and emmed6='enalaprilmaleaat') ematc6='C09AA02' .
If (ematc7='C09BA02' and emmed7='enalaprilmaleaat') ematc7='C09AA02' .
If (ematc8='C09BA02' and emmed8='enalaprilmaleaat') ematc8='C09AA02' .
*tamsulosin is categorized as antihypertensive, but is never used as antihypertensive; its for BPH.
If (ematc1='C02CA01' and emmed1='omnic') ematc1='G04CA02' .
If (ematc2='C02CA01' and emmed2='omnic') ematc2='G04CA02' .
If (ematc3='C02CA01' and emmed3='omnic') ematc3='G04CA02' .
If (ematc4='C02CA01' and emmed4='omnic') ematc4='G04CA02' .
If (ematc5='C02CA01' and emmed5='omnic') ematc5='G04CA02' .
If (ematc6='C02CA01' and emmed6='omnic') ematc6='G04CA02' .
If (ematc7='C02CA01' and emmed7='omnic') ematc7='G04CA02' .
If (ematc8='C02CA01' and emmed8='omnic') ematc8='G04CA02' .

*emed_ino: no errors.
*emed_ari: no errors.
*emed_ang no errors.

*med_diu: C03.
*HYDROCHLORTHIAZIDE   C03EA01 -->   C03AA03 .
If (ematc1='C03EA01' and emmed1='hydrochloorthiazide') ematc1='C03AA03' .
If (ematc2='C03EA01' and emmed2='hydrochloorthiazide') ematc2='C03AA03' .
If (ematc3='C03EA01' and emmed3='hydrochloorthiazide') ematc3='C03AA03' .
If (ematc4='C03EA01' and emmed4='hydrochloorthiazide') ematc4='C03AA03' .
If (ematc5='C03EA01' and emmed5='hydrochloorthiazide') ematc5='C03AA03' .
If (ematc6='C03EA01' and emmed6='hydrochloorthiazide') ematc6='C03AA03' .
If (ematc7='C03EA01' and emmed7='hydrochloorthiazide') ematc7='C03AA03' .
If (ematc8='C03EA01' and emmed8='hydrochloorthiazide') ematc8='C03AA03' .
EXECUTE.

*med_hyp: C02 C07 C08 C09.
*C02.
* remaining medication coded as C02 but should not be C02.

*NORVASC   C02DE12   --> C08CA01.
If (ematc1='C02DE12') ematc1='C08CA01' .
If (ematc2='C02DE12') ematc2='C08CA01' .
If (ematc3='C02DE12') ematc3='C08CA01' .
If (ematc4='C02DE12') ematc4='C08CA01' .
If (ematc5='C02DE12') ematc5='C08CA01' .
If (ematc6='C02DE12') ematc6='C08CA01' .
If (ematc7='C02DE12') ematc7='C08CA01' .
If (ematc8='C02DE12') ematc8='C08CA01' .

*PLENDIL   C02DE10   --> C08CA02.
If (ematc1='C02DE10') ematc1='C08CA02' .
If (ematc2='C02DE10') ematc2='C08CA02' .
If (ematc3='C02DE10') ematc3='C08CA02' .
If (ematc4='C02DE10') ematc4='C08CA02' .
If (ematc5='C02DE10') ematc5='C08CA02' .
If (ematc6='C02DE10') ematc6='C08CA02' .

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If (ematc7='C02DE10') ematc7='C08CA02' .
If (ematc8='C02DE10') ematc8='C08CA02' .

*LOMIR          C02DE13        --> C08CA03.
If (ematc1='C02DE13') ematc1='C08CA03' .
If (ematc2='C02DE13') ematc2='C08CA03' .
If (ematc3='C02DE13') ematc3='C08CA03' .
If (ematc4='C02DE13') ematc4='C08CA03' .
If (ematc5='C02DE13') ematc5='C08CA03' .
If (ematc6='C02DE13') ematc6='C08CA03' .
If (ematc7='C02DE13') ematc7='C08CA03' .
If (ematc8='C02DE13') ematc8='C08CA03' .

*CARDENE        C02DE09        --> C08CA04.
If (ematc1='C02DE09') ematc1='C08CA04' .
If (ematc2='C02DE09') ematc2='C08CA04' .
If (ematc3='C02DE09') ematc3='C08CA04' .
If (ematc4='C02DE09') ematc4='C08CA04' .
If (ematc5='C02DE09') ematc5='C08CA04' .
If (ematc6='C02DE09') ematc6='C08CA04' .
If (ematc7='C02DE09') ematc7='C08CA04' .
If (ematc8='C02DE09') ematc8='C08CA04' .

*ADALAT, NIFEDIPINE,  C02DE02        --> C08CA05 .
If (ematc1='C02DE02') ematc1='C08CA05' .
If (ematc2='C02DE02') ematc2='C08CA05' .
If (ematc3='C02DE02') ematc3='C08CA05' .
If (ematc4='C02DE02') ematc4='C08CA05' .
If (ematc5='C02DE02') ematc5='C08CA05' .
If (ematc6='C02DE02') ematc6='C08CA05' .
If (ematc7='C02DE02') ematc7='C08CA05' .
If (ematc8='C02DE02') ematc8='C08CA05' .

*SYSCOR         C02DE14        --> C08CA07.
If (ematc1='C02DE14') ematc1='C08CA07' .
If (ematc2='C02DE14') ematc2='C08CA07' .
If (ematc3='C02DE14') ematc3='C08CA07' .
If (ematc4='C02DE14') ematc4='C08CA07' .
If (ematc5='C02DE14') ematc5='C08CA07' .
If (ematc6='C02DE14') ematc6='C08CA07' .
If (ematc7='C02DE14') ematc7='C08CA07' .
If (ematc8='C02DE14') ematc8='C08CA07' .

*ISOPTINE, VERAPAMIL C02DE01        --> C08DA01.
If (ematc1='C02DE01') ematc1='C08DA01' .
If (ematc2='C02DE01') ematc2='C08DA01' .
If (ematc3='C02DE01') ematc3='C08DA01' .
If (ematc4='C02DE01') ematc4='C08DA01' .
If (ematc5='C02DE01') ematc5='C08DA01' .
If (ematc6='C02DE01') ematc6='C08DA01' .
If (ematc7='C02DE01') ematc7='C08DA01' .
If (ematc8='C02DE01') ematc8='C08DA01' .
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*DILTIAZEM, TILDIEM, C02DE04 --> C08DB01.
If (ematc1='C02DE04') ematc1='C08DB01' .
If (ematc2='C02DE04') ematc2='C08DB01' .
If (ematc3='C02DE04') ematc3='C08DB01' .
If (ematc4='C02DE04') ematc4='C08DB01' .
If (ematc5='C02DE04') ematc5='C08DB01' .
If (ematc6='C02DE04') ematc6='C08DB01' .
If (ematc7='C02DE04') ematc7='C08DB01' .
If (ematc8='C02DE04') ematc8='C08DB01' .

*CAPOTEN   C02EA01   --> C09AA01.
If (ematc1='C02EA01') ematc1='C09AA01' .
If (ematc2='C02EA01') ematc2='C09AA01' .
If (ematc3='C02EA01') ematc3='C09AA01' .
If (ematc4='C02EA01') ematc4='C09AA01' .
If (ematc5='C02EA01') ematc5='C09AA01' .
If (ematc6='C02EA01') ematc6='C09AA01' .
If (ematc7='C02EA01') ematc7='C09AA01' .
If (ematc8='C02EA01') ematc8='C09AA01' .

*RENITEC, enalapril   C02EA02   --> C09AA02.
If (ematc1='C02EA02') ematc1='C09AA02' .
If (ematc2='C02EA02') ematc2='C09AA02' .
If (ematc3='C02EA02') ematc3='C09AA02' .
If (ematc4='C02EA02') ematc4='C09AA02' .
If (ematc5='C02EA02') ematc5='C09AA02' .
If (ematc6='C02EA02') ematc6='C09AA02' .
If (ematc7='C02EA02') ematc7='C09AA02' .
If (ematc8='C02EA02') ematc8='C09AA02' .

*NOVATEC, ZESTRIL   C02EA03   --> C09AA03 .
If (ematc1='C02EA03') ematc1='C09AA03' .
If (ematc2='C02EA03') ematc2='C09AA03' .
If (ematc3='C02EA03') ematc3='C09AA03' .
If (ematc4='C02EA03') ematc4='C09AA03' .
If (ematc5='C02EA03') ematc5='C09AA03' .
If (ematc6='C02EA03') ematc6='C09AA03' .
If (ematc7='C02EA03') ematc7='C09AA03' .
If (ematc8='C02EA03') ematc8='C09AA03' .

*COVERSYL   C02EA04   --> C09AA04 .
If (ematc1='C02EA04') ematc1='C09AA04' .
If (ematc2='C02EA04') ematc2='C09AA04' .
If (ematc3='C02EA04') ematc3='C09AA04' .
If (ematc4='C02EA04') ematc4='C09AA04' .
If (ematc5='C02EA04') ematc5='C09AA04' .
If (ematc6='C02EA04') ematc6='C09AA04' .
If (ematc7='C02EA04') ematc7='C09AA04' .
If (ematc8='C02EA04') ematc8='C09AA04' .

*ACUPRIL   C02EA06   --> C09AA06 .

If (ematc1='C02EA06') ematc1='C09AA06' .
If (ematc2='C02EA06') ematc2='C09AA06' .
If (ematc3='C02EA06') ematc3='C09AA06' .
If (ematc4='C02EA06') ematc4='C09AA06' .
If (ematc5='C02EA06') ematc5='C09AA06' .
If (ematc6='C02EA06') ematc6='C09AA06' .
If (ematc7='C02EA06') ematc7='C09AA06' .
If (ematc8='C02EA06') ematc8='C09AA06' .

*CAPOZIDE   C02LM01   --> C09BA01.
If (ematc1='C02LM01') ematc1='C09BA01' .
If (ematc2='C02LM01') ematc2='C09BA01' .
If (ematc3='C02LM01') ematc3='C09BA01' .
If (ematc4='C02LM01') ematc4='C09BA01' .
If (ematc5='C02LM01') ematc5='C09BA01' .
If (ematc6='C02LM01') ematc6='C09BA01' .
If (ematc7='C02LM01') ematc7='C09BA01' .
If (ematc8='C02LM01') ematc8='C09BA01' .

*ZESTORETIC   C02LM03   --> C09BA03.
If (ematc1='C02LM03') ematc1='C09BA03' .
If (ematc2='C02LM03') ematc2='C09BA03' .
If (ematc3='C02LM03') ematc3='C09BA03' .
If (ematc4='C02LM03') ematc4='C09BA03' .
If (ematc5='C02LM03') ematc5='C09BA03' .
If (ematc6='C02LM03') ematc6='C09BA03' .
If (ematc7='C02LM03') ematc7='C09BA03' .
If (ematc8='C02LM03') ematc8='C09BA03' .
EXECUTE.

*hyzaarC09CX --> C09DA01.
If (ematc1='C09CX') ematc1='C09DA01' .
If (ematc2='C09CX') ematc2='C09DA01' .
If (ematc3='C09CX') ematc3='C09DA01' .
If (ematc4='C09CX') ematc4='C09DA01' .
If (ematc5='C09CX') ematc5='C09DA01' .
If (ematc6='C09CX') ematc6='C09DA01' .
If (ematc7='C09CX') ematc7='C09DA01' .
If (ematc8='C09CX') ematc8='C09DA01' .
EXECUTE.

*acuzide   C09AX --> C09BA06.
If (ematc1='C09AX' and emmed1='acuzide') ematc1='C09BA06' .
If (ematc2='C09AX' and emmed2='acuzide') ematc2='C09BA06' .
If (ematc3='C09AX' and emmed3='acuzide') ematc3='C09BA06' .
If (ematc4='C09AX' and emmed4='acuzide') ematc4='C09BA06' .
If (ematc5='C09AX' and emmed5='acuzide') ematc5='C09BA06' .
If (ematc6='C09AX' and emmed6='acuzide') ematc6='C09BA06' .
If (ematc7='C09AX' and emmed7='acuzide') ematc7='C09BA06' .
If (ematc8='C09AX' and emmed8='acuzide') ematc8='C09BA06' .

*captopril/hydrochloorthiazide C09AX   C09BA01.

If (ematc1='C09AX') ematc1='C09BA01' .
If (ematc2='C09AX') ematc2='C09BA01' .
If (ematc3='C09AX') ematc3='C09BA01' .
If (ematc4='C09AX') ematc4='C09BA01' .
If (ematc5='C09AX') ematc5='C09BA01' .
If (ematc6='C09AX') ematc6='C09BA01' .
If (ematc7='C09AX') ematc7='C09BA01' .
If (ematc8='C09AX') ematc8='C09BA01' .
EXECUTE.

*captopril   C09AP01   C09AA01.
If (ematc1='C09AP01') ematc1='C09AA01' .
If (ematc2='C09AP01') ematc2='C09AA01' .
If (ematc3='C09AP01') ematc3='C09AA01' .
If (ematc4='C09AP01') ematc4='C09AA01' .
If (ematc5='C09AP01') ematc5='C09AA01' .
If (ematc6='C09AP01') ematc6='C09AA01' .
If (ematc7='C09AP01') ematc7='C09AA01' .
If (ematc8='C09AP01') ematc8='C09AA01' .
EXECUTE.

*C07.
*emcoretic (and not emcor) C07AB07   -> C07BB07.
If (ematc1='C07AB07' and emmed1='emcoretic') ematc1='C07BB07' .
If (ematc2='C07AB07' and emmed2='emcoretic') ematc2='C07BB07' .
If (ematc3='C07AB07' and emmed3='emcoretic') ematc3='C07BB07' .
If (ematc4='C07AB07' and emmed4='emcoretic') ematc4='C07BB07' .
If (ematc5='C07AB07' and emmed5='emcoretic') ematc5='C07BB07' .
If (ematc6='C07AB07' and emmed6='emcoretic') ematc6='C07BB07' .
If (ematc7='C07AB07' and emmed7='emcoretic') ematc7='C07BB07' .
If (ematc8='C07AB07' and emmed8='emcoretic') ematc8='C07BB07' .

*atenolol/chloortalidon   C07AB03   --> C07CB03.
If (ematc1='C07AB03' and emmed1='atenolol/chloortalidon') ematc1='C07CB03' .
If (ematc2='C07AB03' and emmed2='atenolol/chloortalidon') ematc2='C07CB03' .
If (ematc3='C07AB03' and emmed3='atenolol/chloortalidon') ematc3='C07CB03' .
If (ematc4='C07AB03' and emmed4='atenolol/chloortalidon') ematc4='C07CB03' .
If (ematc5='C07AB03' and emmed5='atenolol/chloortalidon') ematc5='C07CB03' .
If (ematc6='C07AB03' and emmed6='atenolol/chloortalidon') ematc6='C07CB03' .
If (ematc7='C07AB03' and emmed7='atenolol/chloortalidon') ematc7='C07CB03' .
If (ematc8='C07AB03' and emmed8='atenolol/chloortalidon') ematc8='C07CB03' .

*C08.
*typ-o, use of O instead of 0.
If (ematc1='CO8CA01') ematc1='C08CA01' .
If (ematc2='CO8CA01') ematc2='C08CA01' .
If (ematc3='CO8CA01') ematc3='C08CA01' .
If (ematc4='CO8CA01') ematc4='C08CA01' .
If (ematc5='CO8CA01') ematc5='C08CA01' .
If (ematc6='CO8CA01') ematc6='C08CA01' .
If (ematc7='CO8CA01') ematc7='C08CA01' .
If (ematc8='CO8CA01') ematc8='C08CA01' .

EXECUTE.

*C09.
*irbesartan/hydrochloorthiazide   C09CA04   --> C09DA04.
If (ematc1='C09CA04' and emmed1='irbesartan/hydrochloorthiazide') ematc1='C09DA04' .
If (ematc2='C09CA04' and emmed2='irbesartan/hydrochloorthiazide') ematc2='C09DA04' .
If (ematc3='C09CA04' and emmed3='irbesartan/hydrochloorthiazide') ematc3='C09DA04' .
If (ematc4='C09CA04' and emmed4='irbesartan/hydrochloorthiazide') ematc4='C09DA04' .
If (ematc5='C09CA04' and emmed5='irbesartan/hydrochloorthiazide') ematc5='C09DA04' .
If (ematc6='C09CA04' and emmed6='irbesartan/hydrochloorthiazide') ematc6='C09DA04' .
If (ematc7='C09CA04' and emmed7='irbesartan/hydrochloorthiazide') ematc7='C09DA04' .
If (ematc8='C09CA04' and emmed8='irbesartan/hydrochloorthiazide') ematc8='C09DA04' .

*create a string variable that consists of the first 3 characters of the ATC code.
string e_3ATC1(a30).
COMPUTE e_3ATC1 = CHAR.SUBSTR(ematc1,1,3) .
string e_3ATC2(a30).
COMPUTE e_3ATC2 = CHAR.SUBSTR(ematc2,1,3) .
string e_3ATC3(a30).
COMPUTE e_3ATC3 = CHAR.SUBSTR(ematc3,1,3) .
string e_3ATC4(a30).
COMPUTE e_3ATC4 = CHAR.SUBSTR(ematc4,1,3) .
string e_3ATC5(a30).
COMPUTE e_3ATC5 = CHAR.SUBSTR(ematc5,1,3) .
string e_3ATC6(a30).
COMPUTE e_3ATC6 = CHAR.SUBSTR(ematc6,1,3) .
string e_3ATC7(a30).
COMPUTE e_3ATC7 = CHAR.SUBSTR(ematc7,1,3) .
string e_3ATC8(a30).
COMPUTE e_3ATC8 = CHAR.SUBSTR(ematc8,1,3) .

*create a string variable that consists of the first 4 characters of the ATC code.
string e_4ATC1(a30).
COMPUTE e_4ATC1 = CHAR.SUBSTR(ematc1,1,4) .
string e_4ATC2(a30).
COMPUTE e_4ATC2 = CHAR.SUBSTR(ematc2,1,4) .
string e_4ATC3(a30).
COMPUTE e_4ATC3 = CHAR.SUBSTR(ematc3,1,4) .
string e_4ATC4(a30).
COMPUTE e_4ATC4 = CHAR.SUBSTR(ematc4,1,4) .
string e_4ATC5(a30).
COMPUTE e_4ATC5 = CHAR.SUBSTR(ematc5,1,4) .
string e_4ATC6(a30).
COMPUTE e_4ATC6 = CHAR.SUBSTR(ematc6,1,4) .
string e_4ATC7(a30).
COMPUTE e_4ATC7 = CHAR.SUBSTR(ematc7,1,4) .
string e_4ATC8(a30).
COMPUTE e_4ATC8 = CHAR.SUBSTR(ematc8,1,4) .

*create a string variable that consists of the first 5 characters of the ATC code.

```
string e_5ATC1(a30).
COMPUTE e_5ATC1 = CHAR.SUBSTR(ematc1,1,5) .
string e_5ATC2(a30).
COMPUTE e_5ATC2 = CHAR.SUBSTR(ematc2,1,5) .
string e_5ATC3(a30).
COMPUTE e_5ATC3 = CHAR.SUBSTR(ematc3,1,5) .
string e_5ATC4(a30).
COMPUTE e_5ATC4 = CHAR.SUBSTR(ematc4,1,5) .
string e_5ATC5(a30).
COMPUTE e_5ATC5 = CHAR.SUBSTR(ematc5,1,5) .
string e_5ATC6(a30).
COMPUTE e_5ATC6 = CHAR.SUBSTR(ematc6,1,5) .
string e_5ATC7(a30).
COMPUTE e_5ATC7 = CHAR.SUBSTR(ematc7,1,5) .
string e_5ATC8(a30).
COMPUTE e_5ATC8 = CHAR.SUBSTR(ematc8,1,5) .
EXECUTE.

*emed_ino: no errors.
*emed_ari no errors.
*med_ang no errors.

*med_diu: C03.
RECODE emed_diu (ELSE=COPY) INTO emed_diu_or.
VARIABLE LABELS  emed_diu_or 'origineel'.
EXECUTE.
RECODE emed_diu (ELSE=-3).
EXECUTE.
If (emvar13 le -1) emed_diu=-1.
If (emvar13=2 or emvar13=1) emed_diu=0.
If (e_4ATC1='C03' OR e_3ATC2='C03' OR e_3ATC3='C03' OR e_3ATC4='C03' OR e_3ATC5='C03' OR
e_3ATC6='C03' OR e_3ATC7='C03' OR e_3ATC8='C03') emed_diu=1.
EXECUTE.

*some diuretics are combination preps and therefore (incorrectly) not included in the diuretics
variable.
*C07B C07C  C07D C02L C09BA C09DA C08G .
If (e_4ATC1='C07B' OR e_4ATC2='C07B' OR e_4ATC3='C07B' OR e_4ATC4='C07B' OR e_4ATC5='C07B'
OR e_4ATC6='C07B' OR
e_4ATC7='C07B' OR e_4ATC8='C07B') emed_diu=1.
If (e_4ATC1='C07C' OR e_4ATC2='C07C' OR e_4ATC3='C07C' OR e_4ATC4='C07C' OR e_4ATC5='C07C'
OR e_4ATC6='C07C' OR
e_4ATC7='C07C' OR e_4ATC8='C07C') emed_diu=1.
If (e_4ATC1='C07D' OR e_4ATC2='C07D' OR e_4ATC3='C07D' OR e_4ATC4='C07D' OR
e_4ATC5='C07D' OR e_4ATC6='C07D' OR
e_4ATC7='C07D' OR e_4ATC8='C07D') emed_diu=1.
If (e_4ATC1='C02L' OR e_4ATC2='C02L' OR e_4ATC3='C02L' OR e_4ATC4='C02L' OR e_4ATC5='C02L'
OR e_4ATC6='C02L' OR
e_4ATC7='C02L' OR e_4ATC8='C02L') emed_diu=1.
If (e_5ATC1='C09BA' OR e_5ATC2='C09BA' OR e_5ATC3='C09BA' OR e_5ATC4='C09BA' OR
e_5ATC5='C09BA' OR e_5ATC6='C09BA' OR e_5ATC7='C09BA' OR e_5ATC8='C09BA') imed_diu=1.
```

If (e_5ATC1='C09DA' OR e_5ATC2='C09DA' OR e_5ATC3='C09DA' OR e_5ATC4='C09DA' OR e_5ATC5='C09DA' OR e_5ATC6='C09DA' OR e_5ATC7='C09DA' OR e_5ATC8='C09DA') imed_diu=1.
If (e_4ATC1='C08G' OR e_4ATC2='C08G' OR e_4ATC3='C08G' OR e_4ATC4='C08G' OR e_4ATC5='C08G' OR e_4ATC6='C08G' OR e_4ATC7='C08G' OR e_4ATC8='C08G') imed_diu=1.
EXECUTE.

*med_hyp: C02 C07 C08 C09.
RECODE emed_hyp (ELSE=COPY) INTO emed_hyp_or.
VARIABLE LABELS emed_hyp_or 'origineel'.
EXECUTE.
RECODE emed_hyp (ELSE=-3).
EXECUTE.
If (emvar13 le -1) emed_hyp=-1.
If (emvar13=2 or emvar13=1) emed_hyp=0.
If (e_3ATC1='C02' OR e_3ATC2='C02' OR e_3ATC3='C02' OR e_3ATC4='C02' OR e_3ATC5='C02' OR e_3ATC6='C02' OR e_3ATC7='C02' OR e_3ATC8='C02') emed_hyp=1.
If (e_3ATC1='C07' OR e_3ATC2='C07' OR e_3ATC3='C07' OR e_3ATC4='C07' OR e_3ATC5='C07' OR e_3ATC6='C07' OR e_3ATC7='C07' OR e_3ATC8='C07') emed_hyp=1.
If (e_3ATC1='C08' OR e_3ATC2='C08' OR e_3ATC3='C08' OR e_3ATC4='C08' OR e_3ATC5='C08' OR e_3ATC6='C08' OR e_3ATC7='C08' OR e_3ATC8='C08') emed_hyp=1.
If (e_3ATC1='C09' OR e_3ATC2='C09' OR e_3ATC3='C09' OR e_3ATC4='C09' OR e_3ATC5='C09' OR e_3ATC6='C09' OR e_3ATC7='C09' OR e_3ATC8='C09') emed_hyp=1.
EXECUTE.

*create a variable: use of beta blocking agents (atc code C07, thus includes combination preparaten) yes/no.
compute emed_beta=0.
If (emvar13 le -1) emed_beta=-1.
If (e_3ATC1='C07' OR e_3ATC2='C07' OR e_3ATC3='C07' OR e_3ATC4='C07' OR e_3ATC5='C07' OR e_3ATC6='C07' OR
e_3ATC7='C07' OR e_3ATC8='C07') emed_beta=1.
VARIABLE LABELS emed_beta 'use of beta blocking agents'.
VALUE LABELS emed_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*create a variable: use of anticoagulant drugs (vitamine K antagonists, DOACs, dabigatran (atc codes B01AA, B01AF, B01AE)) yes/no.
compute emed_stolling=0.
If (emvar13 le -1) emed_stolling=-1.
If (e_5ATC1='B01AA' OR e_5ATC2='B01AA' OR e_5ATC3='B01AA' OR e_5ATC4='B01AA' OR e_5ATC5='B01AA' OR e_5ATC6='B01AA' OR
e_5ATC7='B01AA') emed_stolling=1.
If (e_5ATC1='B01AF' OR e_5ATC2='B01AF' OR e_5ATC3='B01AF' OR e_5ATC4='B01AF' OR e_5ATC5='B01AF' OR e_5ATC6='B01AF' OR
e_5ATC7='B01AF' OR e_5ATC8='B01AF') emed_stolling=1.
If (e_5ATC1='B01AE' OR e_5ATC2='B01AE' OR e_5ATC3='B01AE' OR e_5ATC4='B01AE' OR e_5ATC5='B01AE' OR e_5ATC6='B01AE' OR
e_5ATC7='B01AE' OR e_5ATC8='B01AE') emed_stolling=1.
VARIABLE LABELS emed_stolling 'use of anticoagulants'.

```
VALUE LABELS   emed_stolling
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.


*combining anticoagulants and betablocking agents: use of both, yes/no.
compute emed_stol_beta=-3.
If (emed_stolling=-1) emed_stol_beta=-1.
If (emed_stolling=1 and emed_beta=1) emed_stol_beta=1.
If (emed_stolling=0 or emed_beta=0) emed_stol_beta=0.
VARIABLE LABELS emed_stol_beta 'use of both beta blocking agent AND anticoagulantia'.
VALUE LABELS   emed_stol_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.


********************year of interview (2001 or 2002).
COMPUTE t5_year=XDATE.YEAR(t5_dat).
VARIABLE LABELS t5_year "LASA main interview year (w5)".
VARIABLE LEVEL t5_year(SCALE).
FORMATS t5_year(F8.0).
VARIABLE WIDTH t5_year(8).
EXECUTE.


*********************ARRHYTHMIA (ARI) at E*********************.
*Selfreport surgery implantation of pacemaker.
COMPUTE e_surARI=-3.
IF (ehart15d le -1) e_surARI=-1.
IF (ehart01 le -1) e_surARI=-1.
IF (ehart15 le -1) e_surARI=-1.
IF (ehart01=0 or ehart01=1) e_surARI=0.
IF (ehart15d=0) e_surARI=0.
IF (ehart15=1) e_surARI=0.
IF (ehart15d=1) e_surARI=1.
VARIABLE LABELS e_surARI 'self report surgery: pacemaker'.
VALUE LABELS e_surARI
        -1 'missing'
        0 'no'
        1 'yes'.


*use of anti arrythmic medication.
RECODE emed_ARI (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO e_mARI.
IF (emed_ino=1) e_mARI=1.
IF (emvar13=1) e_mARI=0.
IF (emvar13 le -1) e_mARI=-1.
VARIABLE LABELS  e_mARI 'use of antiarrhythmics'.
VALUE LABELS e_mARI
        -1 'missing'
        0 'no'
        1 'yes'.
```

*GP diagnosis of ARI.
COMPUTE e_gpARI=-3.
IF (egarrth le -1) e_gpARI=-1.
IF (t5_year le -1) e_gpARI=-2.
IF (egarrth=0) e_gpARI=0.
IF (egarrth=1 and egarrty ge 6) e_gpARI=0.
IF (egarrth=1 and egarrty=5 and t5_year=2001) e_gpARI=0.
IF (egarrth=1 and (egarrty ge 1 and egarrty le 4)) e_gpARI=1.
IF (egarrth=1 and egarrty=5 and t5_YEAR=2002) e_gpARI=1.
IF (egarrth=1 and egarrty le -1) e_gpARI=2.
IF (egarrth=1 and egarrty=1) e_gpARI=1.
IF (cgarrth=1) e_gpARI=1.
If (e_gpARI=-1 AND fgarrth=0) e_gpARI=0.
If (e_gpARI=-1 AND fgarrth=1 AND fgarrthy ge 2) e_gpARI=0.
If (e_gpARI=-1 AND fgarrth=1 AND fgarrthy le 1) e_gpARI=2.
If (e_gpARI=-1 AND hgarrth=0) e_gpARI=0.
If (e_gpARI=-1 AND hgarrth=1 AND hgarrthy ge 2) e_gpARI=0.
If (e_gpARI=-1 AND hgarrth=1 AND hgarrthy le 1) e_gpARI=2.
VARIABLE LABELS e_gpARI 'gp diagnosis: cardiac arrhythmia'.
VALUE LABELS e_gpARI
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*ARI algorithm: medication, GP diagnosis and SR implantation of pacemaker combined.
compute e_alg_ARI=-3.
IF (e_mARI=1) e_alg_ARI=1.
IF (e_mARI=0 and e_gpARI=1 and (emed_stol_beta=1)) e_alg_ARI=1.
IF (e_mARI=0 and e_gpARI=1 and (emed_stol_beta=0) and egarrths=1) e_alg_ARI=1.
IF (e_mARI=0 and e_gpARI=1 and (emed_stol_beta=0) and egarrths le 0 and e_surARI=1) e_alg_ARI=1.
IF (e_mARI=0 and e_gpARI=1 and (emed_stol_beta=0) and egarrths le 0 and e_surARI le 0) e_alg_ARI=2.
IF (e_mARI=0 and e_gpARI=0 and e_surARI=1) e_alg_ARI=3.
IF (e_mARI=0 and e_gpARI=0 and e_surARI le 0) e_alg_ARI=0.
IF (e_mARI=0 and e_gpARI=2 and (emed_stol_beta=1)) e_alg_ARI=1.
IF (e_mARI=0 and e_gpARI=2 and (emed_stol_beta=0) and e_surARI=1) e_alg_ARI=1.
IF (e_mARI=0 and e_gpARI=2 and (emed_stol_beta=0) and e_surARI le 0) e_alg_ARI=0.
IF (e_mARI=0 and e_gpARI=2 and (emed_stol_beta=0) and e_surARI le -1) e_alg_ARI=0.
IF (e_mARI=0 and e_gpARI=-1 and e_surARI=1) e_alg_ARI=2.
IF (e_mARI=0 and e_gpARI=-1 and (emed_stol_beta=0) and e_surARI=0) e_alg_ARI=0.
IF (e_mARI=0 and e_gpARI=-1 and (emed_stol_beta=0) and e_surARI le -1) e_alg_ARI=-1.
IF (e_mARI=0 and e_gpARI=-1 and (emed_stol_beta=1) and e_surARI le 0) e_alg_ARI=-1.
IF (e_mARI le -1 and e_gpARI=1 and egarrths=1) e_alg_ARI=1.
IF (e_mARI le -1 and e_gpARI=1 and egarrths le 0 and e_surARI=1) e_alg_ARI=1.
IF (e_mARI le -1 and e_gpARI=1 and egarrths le 0 and e_surARI le 0) e_alg_ARI=2.
IF (e_mARI le -1 and e_gpARI=0 and e_surARI=1) e_alg_ARI=3.
IF (e_mARI le -1 and e_gpARI=0 and e_surARI le 0) e_alg_ARI=0.
IF (e_mARI le -1 and e_gpARI=2 and e_surARI=1) e_alg_ARI=1.
IF (e_mARI le -1 and e_gpARI=2 and e_surARI le 0) e_alg_ARI=-1.

IF (e_mARI le -1 and e_gpARI le -1 and e_surARI=1) e_alg_ARI=2.
IF (e_mARI le -1 and e_gpARI le -1 and e_surARI le 0) e_alg_ARI=-1.
IF (e_alg_ARI=-1 and (etrhart1=0 or etphart1=0)) e_alg_ARI=0.
VARIABLE LABELS e_alg_ARI 'E wave: arrythmia'.
VALUE LABELS e_alg_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CEREBROVASCULAR ACCIDENT (CVA) at E*********************.
*Selfreport diagnosis of CVA.
COMPUTE e_srCVA=-3.
IF (ecva01=2 or ecva01=3) e_srCVA=1.
IF (ecva01=0 or ecva01=1) e_srCVA=0.
IF (etpcva01=1) e_srCVA=1.
IF (etpcva01=0) e_srCVA=0.
IF (etrcva01=1) e_srCVA=1.
IF (etrcva01=0) e_srCVA=0.
IF (ecva01 le -1 and etpcva01 le -1 and etrcva01 le -1) e_srCVA=-1.
VARIABLE LABELS e_srCVA 'self report: CVA'.
VALUE LABELS e_srCVA
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CVA.
COMPUTE e_gpCVA=-3.
IF (egcva le -1) e_gpCVA=-1.
IF (t5_year le -1) e_gpCVA=-2.
IF (egcva=0) e_gpCVA=0.
IF (egcva=1 and egcvay ge 6) e_gpCVA=0.
IF (egcva=1 and egcvay=5 and t5_year=2001) e_gpCVA=0.
IF (egcva=1 and (egcvay ge 1 and egcvay le 4)) e_gpCVA=1.
IF (egcva=1 and egcvay=5 and t5_YEAR=2002) e_gpCVA=1.
IF (egcva=1 and egcvay le -1) e_gpCVA=2.
IF (egcva=1 and egcvay=1) e_gpCVA=1.
IF (cgcva=1) e_gpCVA=1.
IF (bgcva=1) e_gpCVA=1.
If (e_gpCVA=-1 AND fgcva=0) e_gpCVA=0.
If (e_gpCVA=-1 AND fgcva=1 AND fgcvay ge 2) e_gpCVA=0.
If (e_gpCVA=-1 AND fgcva=1 AND fgcvay le 1) e_gpCVA=2.
If (e_gpCVA=-1 AND hgcva=0) e_gpCVA=0.
If (e_gpCVA=-1 AND hgcva=1 AND hgcvay ge 2) e_gpCVA=0.
If (e_gpCVA=-1 AND hgcva=1 AND hgcvay le 1) e_gpCVA=2.
VARIABLE LABELS e_gpCVA 'gp diagnosis: CVA'.
VALUE LABELS e_gpCVA
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'

2 'diagnose = yes, but year = missing'.

*CVA algorithm: GP diagnosis and SR combined.
COMPUTE e_alg_CVA=-3.
IF (e_gpCVA=1 and egcvas=1) e_alg_CVA=1.
IF (e_gpCVA=1 and egcvas le 0 and e_srCVA=1) e_alg_CVA=1.
IF (e_gpCVA=1 and egcvas le 0 and e_srCVA=0) e_alg_CVA=3.
IF (e_gpCVA=1 and egcvas le 0 and e_srCVA le -1) e_alg_CVA=2.
IF (e_gpCVA=0 and e_srCVA=1) e_alg_CVA=3.
IF (e_gpCVA=0 and e_srCVA=0) e_alg_CVA=0.
IF (e_gpCVA=0 and e_srCVA le -1) e_alg_CVA=0.
IF (e_gpCVA=2 and e_srCVA=1) e_alg_CVA=1.
IF (e_gpCVA=2 and e_srCVA=0) e_alg_CVA=0.
IF (e_gpCVA=2 and e_srCVA le -1) e_alg_CVA=-1.
IF (e_gpCVA le -1 and e_srCVA=1) e_alg_CVA=2.
IF (e_gpCVA le -1 and e_srCVA=0) e_alg_CVA=0.
IF (e_gpCVA le -1 and e_srCVA le -1) e_alg_CVA=-1.
VARIABLE LABELS e_alg_CVA 'E wave: cerebrovascular accident'.
VALUE LABELS e_alg_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

********************MYOCARDIAL INFARCTION (MI) at E********************.
*Selfreport diagnosis of MI.
COMPUTE e_srMI=-5.
IF (ehart01 le -1) e_srMI=-1.
IF ((ehart01=2 or ehart01=3) and ehart05 le -1) e_srMI=-1.
IF (ehart05=1) e_srMI=0.
IF (ehart01=0 or ehart01=1) e_srMI=0.
IF (ehart05=2) e_srMI=1.
IF (etphart1=0 or etrhart1=0) e_srMI=0.
VARIABLE LABELS e_srMI 'self report: myocardial infarction'.
VALUE LABELS e_srMI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of MI.
COMPUTE e_gpmi=-3.
IF (egmi le -1) e_gpmi=-1.
IF (t5_year le -1) e_gpmi=-2.
IF (egmi=0) e_gpmi=0.
IF (egmi=1 and egmiy ge 6) e_gpmi=0.
IF (egmi=1 and egmiy=5 and t5_year=2001) e_gpmi=0.
IF (egmi=1 and (egmiy ge 1 and egmiy le 4)) e_gpmi=1.
IF (egmi=1 and egmiy=5 and t5_YEAR=2002) e_gpmi=1.
IF (egmi=1 and egmiy le -1) e_gpmi=2.
IF (egmi=1 and egmiy=1) e_gpmi=1.

IF (cgmi=1) e_gpmi=1.
If (e_gpmi=-1 AND fgmi=0) e_gpmi=0.
If (e_gpmi=-1 AND fgmi=1 AND fgmiy ge 2) e_gpmi=0.
If (e_gpmi=-1 AND fgmi=1 AND fgmiy le 1) e_gpmi=2.
If (e_gpmi=-1 AND hgmi=0) e_gpmi=0.
If (e_gpmi=-1 AND hgmi=1 AND hgmiy ge 2) e_gpmi=0.
If (e_gpmi=-1 AND hgmi=1 AND hgmiy le 1) e_gpmi=2.
VARIABLE LABELS e_gpMI 'gp diagnosis: MI'.
VALUE LABELS e_gpMI
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*MI algorithm: GP diagnosis and SR combined.
COMPUTE e_alg_MI=-3.
IF (e_gpMI=1 and egmis=1) e_alg_MI=1.
IF (e_gpMI=1 and egmis le 0 and e_srMI=1) e_alg_MI=1.
IF (e_gpMI=1 and egmis le 0 and e_srMI=0) e_alg_MI=3.
IF (e_gpMI=1 and egmis le 0 and e_srMI le -1) e_alg_MI=2.
IF (e_gpMI=0 and e_srMI=1) e_alg_MI=3.
IF (e_gpMI=0 and e_srMI=0) e_alg_MI=0.
IF (e_gpMI=0 and e_srMI le -1) e_alg_MI=0.
IF (e_gpMI=2 and e_srMI=1) e_alg_MI=1.
IF (e_gpMI=2 and e_srMI=0) e_alg_MI=0.
IF (e_gpMI=2 and e_srMI le -1) e_alg_MI=-1.
IF (e_gpMI le -1 and e_srMI=1) e_alg_MI=2.
IF (e_gpMI le -1 and e_srMI=0) e_alg_MI=0.
IF (e_gpMI le -1 and e_srMI le -1) e_alg_MI=-1.
VARIABLE LABELS e_alg_MI 'E wave: myocardial infarction'.
VALUE LABELS e_alg_MI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************ANGINA PECTORIS (AP) at E*********************.
*Selfreport diagnosis of AP.
COMPUTE e_srAP=-5.
IF (ehart01 le -1) e_srAP=-1.
IF ((ehart01=2 or ehart01=3) and ehart10 le -1) e_srAP=-1.
IF (ehart01=0 or ehart01=1) e_srAP=0.
IF (ehart11=1 or ediabe12=1) e_srAP=0.
if (((ehart01=2 or ehart01=3) and ehart10=1) OR ((ediabe01=2 or ediabe01=3) and ediabe11=1))
e_srAP=0.
IF (((ehart01=2 or ehart01=3) and ehart10 ge 4) OR ((ediabe01=2 or ediabe01=3) and ediabe11 ge 4))
e_srAP=0.
IF (((ehart01=2 or ehart01=3) and ehart10=2 and ehart11 le -1) OR ((ediabe01=2 or ediabe01=3) and
ediabe11=2 and ediabe12 le -1)) e_srAP=2.

IF (ehart11=2 or ediabe12=2) e_srAP=1.
IF (ehart10=3 or ediabe11=3) e_srAP=1.
IF (etphart1=0 or etrhart1=0) e_srAP=0.
VARIABLE LABELS e_srAP 'self report: angina pectoris'.
VALUE LABELS e_srAP
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of AP.
COMPUTE e_gpAP=-3.
IF (egap le -1) e_gpAP=-1.
IF (t5_year le -1) e_gpAP=-2.
IF (egap=0) e_gpAP=0.
IF (egap=1 and egapy ge 6) e_gpAP=0.
IF (egap=1 and egapy=5 and t5_year=2001) e_gpAP=0.
IF (egap=1 and (egapy ge 1 and egapy le 4)) e_gpAP=1.
IF (egap=1 and egapy=5 and t5_YEAR=2002) e_gpAP=1.
IF (egap=1 and egapy le -1) e_gpAP=2.
IF (egap=1 and egapy=1) e_gpAP=1.
IF (cgap=1) e_gpAP=1.
If (e_gpap=-1 AND fgap=0) e_gpap=0.
If (e_gpap=-1 AND fgap=1 AND fgapy ge 2) e_gpap=0.
If (e_gpap=-1 AND fgap=1 AND fgapy le 1) e_gpap=2.
If (e_gpap=-1 AND hgap=0) e_gpap=0.
If (e_gpap=-1 AND hgap=1 AND hgapy ge 2) e_gpap=0.
If (e_gpap=-1 AND hgap=1 AND hgapy le 1) e_gpap=2.
VARIABLE LABELS e_gpAP 'gp diagnosis: angina pectoris'.
VALUE LABELS e_gpAP
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*use of AP medication: nitrates.
RECODE emed_ang (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO e_mAP.
IF (emvar13 le -1) e_mAP=-1.
IF (emvar13=1) e_mAP=0.
VARIABLE LABELS e_mAP 'use of nitratess'.
VALUE LABELS e_mAP
        -1 'missing'
        0 'no'
        1 'yes'.

*AP algorithm: medication, GP diagnosis and SR combined.
COMPUTE e_alg_AP=-3.
IF (e_mAP=1) e_alg_AP=1.
IF (e_mAP le 0 and e_srAP=1 and e_gpAP=1) e_alg_AP=1.
IF (e_mAP le 0 and e_srAP=1 and e_gpAP=0) e_alg_AP=3.
IF (e_mAP le 0 and e_srAP=1 and e_gpap=2) e_alg_AP=1.

IF (e_mAP le 0 and e_srAP=1 and e_gpAP le -1) e_alg_AP=2.
IF (e_mAP le 0 and e_srAP=0 and e_gpAP=1 and egaps=1) e_alg_AP=1.
IF (e_mAP le 0 and e_srAP=0 and e_gpAP=1 and egaps le 0) e_alg_AP=3.
IF (e_mAP le 0 and e_srAP=0 and e_gpAP=0) e_alg_AP=0.
IF (e_mAP le 0 and e_srAP=0 and e_gpap=2) e_alg_AP=0.
IF (e_mAP le 0 and e_srAP=0 and e_gpAP le -1) e_alg_AP=0.
IF (e_mAP le 0 and e_srAP=2 and e_gpAP=1) e_alg_AP=1.
IF (e_mAP le 0 and e_srAP=2 and e_gpAP=0) e_alg_AP=0.
IF (e_mAP le 0 and e_srAP=2 and e_gpAP=2) e_alg_AP=-1.
IF (e_mAP le 0 and e_srAP=2 and e_gpap=-1) e_alg_AP=-1.
IF (e_mAP le 0 and e_srAP le -1 and e_gpAP=1 and egaps=1) e_alg_AP=1.
IF (e_mAP le 0 and e_srAP le -1 and e_gpAP=1 and egaps le 0) e_alg_AP=2.
IF (e_mAP le 0 and e_srAP le -1 and e_gpAP=0) e_alg_AP=0.
IF (e_mAP le 0 and e_srAP le -1 and e_gpap=2) e_alg_AP=-1.
IF (e_mAP le 0 and e_srAP le -1 and e_gpAP le -1) e_alg_AP=-1.
VARIABLE LABELS e_alg_AP 'E wave: angina pectoris'.
VALUE LABELS e_alg_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CONGESTIVE HEART FAILURE (CHF) at E*********************.
*Selfreport diagnosis of CHF.
COMPUTE e_srCHF=-3.
IF (ehart01 le -1) e_srCHF=-1.
IF ((ehart01=2 or ehart01=3) and ehart12 le -1) e_srCHF=-1.
IF (ehart01=0 or ehart01=1) e_srCHF=0.
IF ((ehart01=2 or ehart01=3) and ehart12=1) e_srCHF=0.
IF ((ehart01=2 or ehart01=3) and ehart12=2) e_srCHF=1.
IF (etphart1=0 or etrhart1=0) e_srCHF=0.
VARIABLE LABELS e_srCHF 'self reported diagnosis of congestive heart failure'.
VALUE LABELS e_srCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CHF.
COMPUTE e_gpCHF=-3.
IF (egchf le -1) e_gpCHF=-1.
IF (t5_year le -1) e_gpCHF=-2.
IF (egchf=0) e_gpCHF=0.
IF (egchf=1 and egchfy ge 6) e_gpCHF=0.
IF (egchf=1 and egchfy=5 and t5_year=2001) e_gpCHF=0.
IF (egchf=1 and (egchfy ge 1 and egchfy le 4)) e_gpCHF=1.
IF (egchf=1 and egchfy=5 and t5_YEAR=2002) e_gpCHF=1.
IF (egchf=1 and egchfy le -1) e_gpCHF=2.
IF (egchf=1 and egchfy=1) e_gpCHF=1.
IF (cgchf=1) e_gpCHF=1.
IF (t5_year le -1) e_gpCHF=-2.
If (e_gpchf=-1 AND fgchf=0) e_gpchf=0.

If (e_gpchf=-1 AND fgchf=1 AND fgchfy ge 2) e_gpchf=0.
If (e_gpchf=-1 AND fgchf=1 AND fgchfy le 1) e_gpchf=2.
If (e_gpchf=-1 AND hgchf=0) e_gpchf=0.
If (e_gpchf=-1 AND hgchf=1 AND hgchfy ge 2) e_gpchf=0.
If (e_gpchf=-1 AND hgchf=1 AND hgchfy le 1) e_gpchf=2.
VARIABLE LABELS e_gpCHF 'gp diagnosis: congestive heart failure'.
VALUE LABELS e_gpCHF
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CHF medication: diuretics, antihypertensives, nitrates, inotropics, beta blocking agents.
compute e_mCHF=0.
if (emed_diu=1 and (emed_hyp=1 or emed_ang=1 or emed_ino=1 or emed_beta=1)) e_mCHF=1.
IF (emvar13 le -1) e_mCHF=-1.
IF (emvar13=1) e_mCHF=0.
VARIABLE LABELS e_mCHF 'medication for congestive heart failure'.
VALUE LABELS e_mCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*CHF algorithm: medication, GP diagnosis and SR combined.
COMPUTE e_alg_CHF=-3.
IF (e_gpCHF=1 and egchfs=1) e_alg_CHF=1.
IF (e_gpCHF=1 and egchfs le 0 and e_srCHF=1) e_alg_CHF=1.
IF (e_gpCHF=1 and egchfs le 0 and e_srCHF le 0 and e_mCHF=1) e_alg_CHF=1.
IF (e_gpCHF=1 and egchfs le 0 and e_srCHF=0 and e_mCHF=0) e_alg_CHF=2.
IF (e_gpCHF=1 and egchfs le 0 and e_srCHF le 0 and e_mCHF le -1) e_alg_CHF=2.
IF (e_gpCHF=1 and egchfs le 0 and e_srCHF le -1 and e_mCHF le 0) e_alg_CHF=2.
IF (e_gpCHF=0 and e_srCHF=1 and e_mCHF=1) e_alg_CHF=1.
IF (e_gpCHF=0 and e_srCHF=1 and e_mCHF le 0) e_alg_CHF=2.
IF (e_gpCHF=0 and e_srCHF le 0 and e_mCHF=1) e_alg_CHF=3.
IF (e_gpCHF=0 and e_srCHF le 0 and e_mCHF le 0) e_alg_CHF=0.
IF (e_gpCHF=2 and e_srCHF=1) e_alg_CHF=1.
IF (e_gpCHF=2 and e_srCHF le 0 and e_mCHF=1) e_alg_CHF=1.
IF (e_gpCHF=2 and e_srCHF le 0 and e_mCHF le 0) e_alg_CHF=0.
IF (e_gpCHF=2 and e_srCHF=0 and e_mCHF=-1) e_alg_CHF=-1.
IF (e_gpCHF=2 and e_srCHF le -1 and e_mCHF le -1) e_alg_CHF=-1.
IF (e_gpCHF le -1 and e_srCHF=1 and e_mCHF=1) e_alg_CHF=1.
IF (e_gpCHF le -1 and e_srCHF=1 and e_mCHF le 0) e_alg_CHF=2.
IF (e_gpCHF le -1 and e_srCHF=0 and e_mCHF=1) e_alg_CHF=2.
IF (e_gpCHF le -1 and e_srCHF=0 and e_mCHF le 0) e_alg_CHF=0.
IF (e_gpCHF le -1 and e_srCHF le -1 and e_mCHF=1) e_alg_CHF=2.
IF (e_gpCHF le -1 and e_srCHF le -1 and e_mCHF=0) e_alg_CHF=0.
IF (e_gpCHF le -1 and e_srCHF le -1 and e_mCHF le -1) e_alg_CHF=-1.
VARIABLE LABELS e_alg_CHF 'E wave: congestive heart failure'.
VALUE LABELS e_alg_CHF
        -1 'missing'
        0 'no'

1 'definite'
            2 'possible'
            3 'contradictory'.

**********************PERIPHERAL ARTERIAL DISEASE (PAD) at E**********************.
*Selfreport diagnosis of PAD.
COMPUTE e_srPAD=-5.
IF (eartvei1 le -1) e_srPAD=-1.
IF ((eartvei1=2 or eartvei1=3) and eartvei5 le -1) e_srPAD=-1.
IF (eartvei1=0 or eartvei1=1) e_srPAD=0.
IF (eartvei7=1 or ediabe09=1) e_srPAD=0.
IF (eartvei5=1 or ediabe07=1) e_srPAD=0.
IF ((eartvei5=2 and eartvei7 le -1) or (ediabe07=2 and ediabe09 le -1)) e_srPAD=2.
IF (eartvei7=2 or ediabe09=2) e_srPAD=1.
IF (etpartv1=0 OR etrartv1=0) e_srPAD=0.
IF (etpartv1=1 OR etrartv1=1) e_srPAD=2.
IF (eartvei1 le -1 and etpartv1 le -1 and etrartv1 le -1) e_srPAD=-1.
VARIABLE LABELS e_srPAD 'self reported diagnosis of peripheral artery disease'.
VALUE LABELS e_srPAD
          -1 'missing'
           0 'no'
           1 'yes'
           2 'possible'.

*Selfreport surgery.
COMPUTE e_surPAD=-3.
IF (eartvei1 le -1) e_surPAD=-1.
IF ((eartvei1=2 or eartvei1=3) and eartve8 le -1) e_surPAD=-1.
IF (eartve8=1) e_surPAD=0.
IF ((eartve8c=0 AND eartve8d=0) AND (eartve8b le 0)) e_surPAD=0.
IF (eartvei1=0 or eartvei1=1) e_surPAD=0.
IF ((eartve8c le 0 AND eartve8d le 0) AND (eartve8b=1)) e_surPAD=2.
IF (eartve8c=1 OR eartve8d=1) e_surPAD=1.
VARIABLE LABELS e_surPAD 'self reported surgery of peripheral arteries'.
VALUE LABELS e_surPAD
          -1 'missing'
           0 'no'
           1 'yes'
           2 'possible'.

*GP diagnosis of PAD.
COMPUTE e_gpPAD=-3.
IF (egartvei le -1) e_gpPAD=-1.
IF (t5_year le -1) e_gpPAD=-2.
IF (egartvei=0) e_gpPAD=0.
IF (egartvei=1 and egartvey ge 6) e_gpPAD=0.
IF (egartvei=1 and egartvey=5 and t5_year=2001) e_gpPAD=0.
IF (egartvei=1 and (egartvey ge 1 and egartvey le 4)) e_gpPAD=1.
IF (egartvei=1 and egartvey=5 and t5_YEAR=2002) e_gpPAD=1.
IF (egartvei=1 and egartvey le -1) e_gpPAD=2.
IF (egartvei=1 and egartvey=1) e_gpPAD=1.
IF (cgartvei=1) e_gpPAD=1.

IF (bgclan=1) e_gpPAD=1.
If (e_gpPAD=-1 AND fgartvei=0) e_gpPAD=0.
If (e_gpPAD=-1 AND fgartvei=1 AND fgartvey ge 2) e_gpPAD=0.
If (e_gpPAD=-1 AND fgartvei=1 AND fgartvey le 1) e_gpPAD=2.
If (e_gpPAD=-1 AND hgartvei=0) e_gpPAD=0.
If (e_gpPAD=-1 AND hgartvei=1 AND hgartvey ge 2) e_gpPAD=0.
If (e_gpPAD=-1 AND hgartvei=1 AND hgartvey le 1) e_gpPAD=2.
VARIABLE LABELS e_gpPAD 'gp diagnosis: PAD'.
VALUE LABELS e_gpPAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*PAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE e_alg_PAD=-3.
IF (e_surPAD=1) e_alg_PAD=1.
IF (e_surPAD le 0 and e_gpPAD=1 and egartves=1) e_alg_PAD=1.
IF (e_surPAD le 0 and e_gpPAD=1 and egartves le 0 and e_srPAD=1) e_alg_PAD=1.
IF (e_surPAD le 0 and e_gpPAD=1 and egartves le 0 and e_srPAD=0) e_alg_PAD=3.
IF (e_surPAD le 0 and e_gpPAD=1 and egartves le 0 and e_srPAD le -1) e_alg_PAD=2.
IF (e_surPAD le 0 and e_gpPAD=1 and egartves le 0 and e_srPAD=2) e_alg_PAD=1.
IF (e_surPAD le 0 and e_gpPAD=0 and e_srPAD=1) e_alg_PAD=3.
IF (e_surPAD le 0 and e_gpPAD=0 and e_srPAD=0) e_alg_PAD=0.
IF (e_surPAD le 0 and e_gpPAD=0 and e_srPAD le -1) e_alg_PAD=0.
IF (e_surPAD le 0 and e_gpPAD=0 and e_srPAD=2) e_alg_PAD=0.
IF (e_surPAD le 0 and e_gpPAD=2 and e_srPAD=1) e_alg_PAD=1.
IF (e_surPAD le 0 and e_gpPAD=2 and e_srPAD=0) e_alg_PAD=0.
IF (e_surPAD le 0 and e_gpPAD=2 and e_srPAD le -1) e_alg_PAD=-1.
IF (e_surPAD le 0 and e_gpPAD=2 and e_srPAD=2) e_alg_PAD=1.
IF (e_surPAD le 0 and e_gpPAD le -1 and e_srPAD=1) e_alg_PAD=2.
IF (e_surPAD le 0 and e_gpPAD le -1 and e_srPAD=0) e_alg_PAD=0.
IF (e_surPAD le 0 and e_gpPAD le -1 and e_srPAD le -1) e_alg_PAD=-1.
IF (e_surPAD le 0 and e_gpPAD le -1 and e_srPAD=2) e_alg_PAD=-1.
IF (e_surPAD=2 and e_gpPAD=1) e_alg_PAD=1.
IF (e_surPAD=2 and e_gpPAD=0 and e_srPAD=1) e_alg_PAD=1.
IF (e_surPAD=2 and e_gpPAD=0 and e_srPAD=0) e_alg_PAD=0.
IF (e_surPAD=2 and e_gpPAD=0 and e_srPAD le -1) e_alg_PAD=0.
IF (e_surPAD=2 and e_gpPAD=0 and e_srPAD=2) e_alg_PAD=3.
IF (e_surPAD=2 and e_gpPAD=2 and e_srPAD=1) e_alg_PAD=1.
IF (e_surPAD=2 and e_gpPAD le -1 and e_srPAD=1) e_alg_PAD=1.
IF (e_surPAD=2 and e_gpPAD le -1 and e_srPAD=0) e_alg_PAD=0.
IF (e_surPAD=2 and e_gpPAD le -1 and e_srPAD le -1) e_alg_PAD=-1.
IF (e_surPAD=2 and e_gpPAD le -1 and e_srPAD=2) e_alg_PAD=-1.
VARIABLE LABELS e_alg_PAD 'E wave algorithm: peripheral artery disease'.
VALUE LABELS e_alg_PAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

```
*********************CORONARY ARTERY DISEASE (CAD) at E*********************.
*CAD Selfreport surgery.
COMPUTE e_surCAD=-3.
IF ((ehart01=2 or ehart01=3) and ehart15 le -1) e_surCAD=-1.
IF (ehart01 le -1) e_surCAD=-1.
IF (ehart15b le -1 AND ehart15c le -1) e_surCAD=-1.
IF (ehart15b=0 AND ehart15c=0) e_surCAD=0.
IF (ehart15=1) e_surCAD=0.
IF (ehart01=0 or ehart01=1) e_surCAD=0.
IF (ehart15b=1 OR ehart15c=1) e_surCAD=1.
VARIABLE LABELS e_surCAD 'self reported surgery of coronary arteries'.
VALUE LABELS e_surCAD
        -1 'missing'
        0 'no'
        1 'yes'.


*CAD selfreport (=Selfreport of AP or MI).
COMPUTE e_srCAD=-5.
IF (ehart01 le -1) e_srCAD=-1.
IF (e_srMI=0 AND e_srAP=2) e_srCAD=-1.
IF (e_srMI=0 AND e_srAP le -1) e_srCAD=-1.
IF (e_srMI le -1 AND e_srAP=0) e_srCAD=-1.
IF (e_srMI le -1 AND e_srAP=2) e_srCAD=-1.
IF (e_srMI le -1 AND e_srAP le -1) e_srCAD=-1.
IF (e_srMI=0 AND e_srAP=0) e_srCAD=0.
IF (ehart01=0 or ehart01=1) e_srCAD=0.
IF (e_srMI le -1 AND e_srAP=1) e_srCAD=1.
IF (e_srMI=1) e_srCAD=1.
IF (e_srAP=1) e_srCAD=1.
IF (etphart1=0 or etrhart1=0) e_srCAD=0.
VARIABLE LABELS e_srCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS e_srCAD
        -1 'missing'
        0 'no'
        1 'yes'.


*GP diagnosis of CAD (gp diagnosis of AP or MI).
COMPUTE e_gpCAD=-5.
IF (e_gpMI le -1 AND e_gpAP=0) e_gpCAD=-1.
IF (e_gpMI=0 AND e_gpAP le -1) e_gpCAD=-1.
IF (e_gpMI le -1 AND e_gpAP le -1) e_gpCAD=-1.
IF (e_gpMI=0 AND e_gpAP=0) e_gpCAD=0.
IF (e_gpMI=0 AND e_gpAP=2) e_gpCAD=2.
IF (e_gpMI le -1 AND e_gpAP=2) e_gpCAD=2.
IF (e_gpMI=2 AND e_gpAP=0) e_gpCAD=2.
IF (e_gpMI=2 AND e_gpAP=2) e_gpCAD=2.
IF (e_gpMI=2 AND e_gpAP le -1) e_gpCAD=2.
IF (e_gpMI=1) e_gpCAD=1.
IF (e_gpAP=1) e_gpCAD=1.
IF (t5_year le -1) e_gpCAD=-2.
VARIABLE LABELS e_gpCAD 'self report: myocardial infarction OR angina pectoris'.
```

VALUE LABELS e_gpCAD
    -2 'dropout'
    -1 'missing'
    0 'no'
    1 'yes'
    2 'diagnose = yes, but year = missing'.

*CAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE e_alg_CAD=-3.
IF (e_mAP le 0 and e_surCAD le 0 and e_srMI le 0 and (e_srAP le 0 or e_srAP=2) and e_gpMI le 0) e_alg_CAD=0.
IF (e_mAP le -1 and e_surCAD le -1 and e_srMI le -1 and e_srAP le -1 and e_gpAP le -1 and e_gpMI le -1) e_alg_CAD=-1.
IF (e_mAP=0 and e_surCAD=0 and e_srMI=0 and e_srAP=0 and e_gpAP=0 and e_gpMI=0) e_alg_CAD=0.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_srAP=1 and (e_srMI le 0 and e_gpAP le 0 and e_gpMI le 0))) e_alg_CAD=3.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_srMI=1 and (e_srAP le 0 and e_gpAP le 0 and e_gpMI le 0))) e_alg_CAD=3.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpAP=1 and egaps le 0 and (e_gpMI le 0 or e_gpMI=2) and e_srAP le 0 and e_srMI le 0)) e_alg_CAD=3.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpMI=1 and egmis le 0 and (e_gpAP le 0 or e_gpAP=2) and e_srAP le 0 and e_srMI le 0)) e_alg_CAD=3.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_srAP=1 and (e_srMI le -1 and e_gpAP le -1 and e_gpMI le -1))) e_alg_CAD=2.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_srMI=1 and (e_srAP le -1 and e_gpAP le -1 and e_gpMI le -1))) e_alg_CAD=2.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpAP=1 and egaps le 0 and e_gpMI le -1 and e_srAP le -1 and e_srMI le -1)) e_alg_CAD=2.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpMI=1 and egmis le 0 and e_gpAP le -1 and e_srAP le -1 and e_srMI le -1)) e_alg_CAD=2.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpAP=2 and (e_gpMI le 0 or e_gpMI=2) and (e_srAP le 0 or e_srAP=2) and e_srMI le 0)) e_alg_CAD=0.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpMI=2 and (e_gpAP le 0 or e_gpAP=2) and (e_srAP le 0 or e_srAP=2) and e_srMI le 0)) e_alg_CAD=0.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpAP=2 and (e_gpMI le -1 or e_gpMI=2) and (e_srAP le -1 or e_srAP=2) and e_srMI le -1)) e_alg_CAD=-1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpMI=2 and (e_gpAP le -1 or e_gpAP=2) and (e_srAP le -1 or e_srAP=2) and e_srMI le -1)) e_alg_CAD=-1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_srAP=1 and (e_srMI=1 OR e_gpAP=1 OR e_gpMI=1))) e_alg_CAD=1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_srMI=1 and (e_srAP=1 OR e_gpAP=1 OR e_gpMI=1))) e_alg_CAD=1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpAP=1 and egaps=1)) e_alg_CAD=1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpMI=1 and egmis=1)) e_alg_CAD=1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpAP=1 and egaps le 0) and (e_srMI=1 or e_srAP=1 or e_gpMI=1)) e_alg_CAD=1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpMI=1 and egmis le 0) and (e_srMI=1 or e_srAP=1 or e_gpAP=1)) e_alg_CAD=1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_srAP=1 and e_srMI le 0) and (e_gpAP=2 or e_gpMI=2)) e_alg_CAD=1.

IF ((e_mAP le 0 and e_surCAD le 0) and (e_srMI=1) and (e_gpAP=2 or e_srAP=2 or e_gpMI=2)) e_alg_CAD=1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpAP=1 and e_srMI le 0) and (e_srAP=2 and e_gpMI=2)) e_alg_CAD=1.
IF ((e_mAP le 0 and e_surCAD le 0) and (e_gpMI=1 and e_srMI le 0) and (e_gpAP=2 or e_srAP=2)) e_alg_CAD=1.
IF (e_mAP=1 or e_surCAD=1) e_alg_CAD=1.
VARIABLE LABELS e_alg_CAD 'E wave: coronary artery disease'.
VALUE LABELS e_alg_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************F wave****************.
*enalapril has the wrong ATC codes which hampers the next section of the syntax, therefore change it to the correct code.
If (fmatc1='C09BA02' and fmmed1='enalaprilmaleaat') fmatc1='C09AA02' .
If (fmatc2='C09BA02' and fmmed2='enalaprilmaleaat') fmatc2='C09AA02' .
If (fmatc3='C09BA02' and fmmed3='enalaprilmaleaat') fmatc3='C09AA02' .
If (fmatc4='C09BA02' and fmmed4='enalaprilmaleaat') fmatc4='C09AA02' .
If (fmatc5='C09BA02' and fmmed5='enalaprilmaleaat') fmatc5='C09AA02' .
If (fmatc6='C09BA02' and fmmed6='enalaprilmaleaat') fmatc6='C09AA02' .
If (fmatc7='C09BA02' and fmmed7='enalaprilmaleaat') fmatc7='C09AA02' .
If (fmatc8='C09BA02' and fmmed8='enalaprilmaleaat') fmatc8='C09AA02' .

*tamsulosin is categorized as antihypertensive, but is never used as antihypertensive; its for BPH.
If (fmatc1='C02CA01' and fmmed1='omnic') fmatc1='G04CA02' .
If (fmatc2='C02CA01' and fmmed2='omnic') fmatc2='G04CA02' .
If (fmatc3='C02CA01' and fmmed3='omnic') fmatc3='G04CA02' .
If (fmatc4='C02CA01' and fmmed4='omnic') fmatc4='G04CA02' .
If (fmatc5='C02CA01' and fmmed5='omnic') fmatc5='G04CA02' .
If (fmatc6='C02CA01' and fmmed6='omnic') fmatc6='G04CA02' .
If (fmatc7='C02CA01' and fmmed7='omnic') fmatc7='G04CA02' .
If (fmatc8='C02CA01' and fmmed8='omnic') fmatc8='G04CA02' .

*fmed_ino: no errors.

*med_ari.
*flecainide has the wrong ATC code.
If (fmatc1='C07AA05' and fmmed1='flecainide') fmatc1='C01BC04' .
If (fmatc2='C07AA05' and fmmed2='flecainide') fmatc2='C01BC04' .
If (fmatc3='C07AA05' and fmmed3='flecainide') fmatc3='C01BC04' .
If (fmatc4='C07AA05' and fmmed4='flecainide') fmatc4='C01BC04' .
If (fmatc5='C07AA05' and fmmed5='flecainide') fmatc5='C01BC04' .
If (fmatc6='C07AA05' and fmmed6='flecainide') fmatc6='C01BC04' .
If (fmatc7='C07AA05' and fmmed7='flecainide') fmatc7='C01BC04' .
If (fmatc8='C07AA05' and fmmed8='flecainide') fmatc8='C01BC04' .
EXECUTE.

*fmed_ang no errors.

*med_diu: C03.
*HYDROCHLORTHIAZIDE   C03EA01 -->   C03AA03 .
If (fmatc1='C03EA01' and fmmed1='hydrochloorthiazide') fmatc1='C03AA03' .
If (fmatc2='C03EA01' and fmmed2='hydrochloorthiazide') fmatc2='C03AA03' .
If (fmatc3='C03EA01' and fmmed3='hydrochloorthiazide') fmatc3='C03AA03' .
If (fmatc4='C03EA01' and fmmed4='hydrochloorthiazide') fmatc4='C03AA03' .
If (fmatc5='C03EA01' and fmmed5='hydrochloorthiazide') fmatc5='C03AA03' .
If (fmatc6='C03EA01' and fmmed6='hydrochloorthiazide') fmatc6='C03AA03' .
If (fmatc7='C03EA01' and fmmed7='hydrochloorthiazide') fmatc7='C03AA03' .
If (fmatc8='C03EA01' and fmmed8='hydrochloorthiazide') fmatc8='C03AA03' .
EXECUTE.

*NORVASC   C02DE12   --> C08CA01.
If (fmatc1='C02DE12') fmatc1='C08CA01' .
If (fmatc2='C02DE12') fmatc2='C08CA01' .
If (fmatc3='C02DE12') fmatc3='C08CA01' .
If (fmatc4='C02DE12') fmatc4='C08CA01' .
If (fmatc5='C02DE12') fmatc5='C08CA01' .
If (fmatc6='C02DE12') fmatc6='C08CA01' .
If (fmatc7='C02DE12') fmatc7='C08CA01' .
If (fmatc8='C02DE12') fmatc8='C08CA01' .

*PLENDIL   C02DE10   --> C08CA02.
If (fmatc1='C02DE10') fmatc1='C08CA02' .
If (fmatc2='C02DE10') fmatc2='C08CA02' .
If (fmatc3='C02DE10') fmatc3='C08CA02' .
If (fmatc4='C02DE10') fmatc4='C08CA02' .
If (fmatc5='C02DE10') fmatc5='C08CA02' .
If (fmatc6='C02DE10') fmatc6='C08CA02' .
If (fmatc7='C02DE10') fmatc7='C08CA02' .
If (fmatc8='C02DE10') fmatc8='C08CA02' .

*LOMIR   C02DE13   --> C08CA03.
If (fmatc1='C02DE13') fmatc1='C08CA03' .
If (fmatc2='C02DE13') fmatc2='C08CA03' .
If (fmatc3='C02DE13') fmatc3='C08CA03' .
If (fmatc4='C02DE13') fmatc4='C08CA03' .
If (fmatc5='C02DE13') fmatc5='C08CA03' .
If (fmatc6='C02DE13') fmatc6='C08CA03' .
If (fmatc7='C02DE13') fmatc7='C08CA03' .
If (fmatc8='C02DE13') fmatc8='C08CA03' .

*CARDENE   C02DE09   --> C08CA04.
If (fmatc1='C02DE09') fmatc1='C08CA04' .
If (fmatc2='C02DE09') fmatc2='C08CA04' .
If (fmatc3='C02DE09') fmatc3='C08CA04' .
If (fmatc4='C02DE09') fmatc4='C08CA04' .
If (fmatc5='C02DE09') fmatc5='C08CA04' .
If (fmatc6='C02DE09') fmatc6='C08CA04' .
If (fmatc7='C02DE09') fmatc7='C08CA04' .

If (fmatc8='C02DE09') fmatc8='C08CA04' .

*ADALAT, NIFEDIPINE, C02DE02   --> C08CA05 .
If (fmatc1='C02DE02') fmatc1='C08CA05' .
If (fmatc2='C02DE02') fmatc2='C08CA05' .
If (fmatc3='C02DE02') fmatc3='C08CA05' .
If (fmatc4='C02DE02') fmatc4='C08CA05' .
If (fmatc5='C02DE02') fmatc5='C08CA05' .
If (fmatc6='C02DE02') fmatc6='C08CA05' .
If (fmatc7='C02DE02') fmatc7='C08CA05' .
If (fmatc8='C02DE02') fmatc8='C08CA05' .

*ISOPTINE, VERAPAMIL C02DE01   --> C08DA01.
If (fmatc1='C02DE01') fmatc1='C08DA01' .
If (fmatc2='C02DE01') fmatc2='C08DA01' .
If (fmatc3='C02DE01') fmatc3='C08DA01' .
If (fmatc4='C02DE01') fmatc4='C08DA01' .
If (fmatc5='C02DE01') fmatc5='C08DA01' .
If (fmatc6='C02DE01') fmatc6='C08DA01' .
If (fmatc7='C02DE01') fmatc7='C08DA01' .
If (fmatc8='C02DE01') fmatc8='C08DA01' .

*DILTIAZEM, TILDIEM, C02DE04 --> C08DB01.
If (fmatc1='C02DE04') fmatc1='C08DB01' .
If (fmatc2='C02DE04') fmatc2='C08DB01' .
If (fmatc3='C02DE04') fmatc3='C08DB01' .
If (fmatc4='C02DE04') fmatc4='C08DB01' .
If (fmatc5='C02DE04') fmatc5='C08DB01' .
If (fmatc6='C02DE04') fmatc6='C08DB01' .
If (fmatc7='C02DE04') fmatc7='C08DB01' .
If (fmatc8='C02DE04') fmatc8='C08DB01' .

*CAPOTEN   C02EA01   --> C09AA01.
If (fmatc1='C02EA01') fmatc1='C09AA01' .
If (fmatc2='C02EA01') fmatc2='C09AA01' .
If (fmatc3='C02EA01') fmatc3='C09AA01' .
If (fmatc4='C02EA01') fmatc4='C09AA01' .
If (fmatc5='C02EA01') fmatc5='C09AA01' .
If (fmatc6='C02EA01') fmatc6='C09AA01' .
If (fmatc7='C02EA01') fmatc7='C09AA01' .
If (fmatc8='C02EA01') fmatc8='C09AA01' .

*RENITEC, enalapril   C02EA02   --> C09AA02.
If (fmatc1='C02EA02') fmatc1='C09AA02' .
If (fmatc2='C02EA02') fmatc2='C09AA02' .
If (fmatc3='C02EA02') fmatc3='C09AA02' .
If (fmatc4='C02EA02') fmatc4='C09AA02' .
If (fmatc5='C02EA02') fmatc5='C09AA02' .
If (fmatc6='C02EA02') fmatc6='C09AA02' .
If (fmatc7='C02EA02') fmatc7='C09AA02' .
If (fmatc8='C02EA02') fmatc8='C09AA02' .

```
*NOVATEC, ZESTRIL    C02EA03        --> C09AA03 .
If (fmatc1='C02EA03') fmatc1='C09AA03' .
If (fmatc2='C02EA03') fmatc2='C09AA03' .
If (fmatc3='C02EA03') fmatc3='C09AA03' .
If (fmatc4='C02EA03') fmatc4='C09AA03' .
If (fmatc5='C02EA03') fmatc5='C09AA03' .
If (fmatc6='C02EA03') fmatc6='C09AA03' .
If (fmatc7='C02EA03') fmatc7='C09AA03' .
If (fmatc8='C02EA03') fmatc8='C09AA03' .

*ACUPRIL      C02EA06        --> C09AA06 .
If (fmatc1='C02EA06') fmatc1='C09AA06' .
If (fmatc2='C02EA06') fmatc2='C09AA06' .
If (fmatc3='C02EA06') fmatc3='C09AA06' .
If (fmatc4='C02EA06') fmatc4='C09AA06' .
If (fmatc5='C02EA06') fmatc5='C09AA06' .
If (fmatc6='C02EA06') fmatc6='C09AA06' .
If (fmatc7='C02EA06') fmatc7='C09AA06' .
If (fmatc8='C02EA06') fmatc8='C09AA06' .

*ZESTORETIC C02LM03 --> C09BA03.
If (fmatc1='C02LM03') fmatc1='C09BA03' .
If (fmatc2='C02LM03') fmatc2='C09BA03' .
If (fmatc3='C02LM03') fmatc3='C09BA03' .
If (fmatc4='C02LM03') fmatc4='C09BA03' .
If (fmatc5='C02LM03') fmatc5='C09BA03' .
If (fmatc6='C02LM03') fmatc6='C09BA03' .
If (fmatc7='C02LM03') fmatc7='C09BA03' .
If (fmatc8='C02LM03') fmatc8='C09BA03' .
EXECUTE.

*hyzaarC09CX   --> C09DA01.
If (fmatc1='C09CX') fmatc1='C09DA01' .
If (fmatc2='C09CX') fmatc2='C09DA01' .
If (fmatc3='C09CX') fmatc3='C09DA01' .
If (fmatc4='C09CX') fmatc4='C09DA01' .
If (fmatc5='C09CX') fmatc5='C09DA01' .
If (fmatc6='C09CX') fmatc6='C09DA01' .
If (fmatc7='C09CX') fmatc7='C09DA01' .
If (fmatc8='C09CX') fmatc8='C09DA01' .
EXECUTE.

*acuzide       C09AX   --> C09BA06.
If (fmatc1='C09AX' and fmmed1='acuzide') fmatc1='C09BA06' .
If (fmatc2='C09AX' and fmmed2='acuzide') fmatc2='C09BA06' .
If (fmatc3='C09AX' and fmmed3='acuzide') fmatc3='C09BA06' .
If (fmatc4='C09AX' and fmmed4='acuzide') fmatc4='C09BA06' .
If (fmatc5='C09AX' and fmmed5='acuzide') fmatc5='C09BA06' .
If (fmatc6='C09AX' and fmmed6='acuzide') fmatc6='C09BA06' .
If (fmatc7='C09AX' and fmmed7='acuzide') fmatc7='C09BA06' .
If (fmatc8='C09AX' and fmmed8='acuzide') fmatc8='C09BA06' .
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*motens          C09CA01          --> C08CA09.
If (fmatc1='C09CA01' and fmmed1='motens') fmatc1='C08CA09' .
If (fmatc2='C09CA01' and fmmed2='motens') fmatc2='C08CA09' .
If (fmatc3='C09CA01' and fmmed3='motens') fmatc3='C08CA09' .
If (fmatc4='C09CA01' and fmmed4='motens') fmatc4='C08CA09' .
If (fmatc5='C09CA01' and fmmed5='motens') fmatc5='C08CA09' .
If (fmatc6='C09CA01' and fmmed6='motens') fmatc6='C08CA09' .
If (fmatc7='C09CA01' and fmmed7='motens') fmatc7='C08CA09' .
If (fmatc8='C09CA01' and fmmed8='motens') fmatc8='C08CA09' .

*C07.
*emcoretic (and not emcor) C07AB07   -> C07BB07.
If (fmatc1='C07AB07' and fmmed1='emcoretic') fmatc1='C07BB07' .
If (fmatc2='C07AB07' and fmmed2='emcoretic') fmatc2='C07BB07' .
If (fmatc3='C07AB07' and fmmed3='emcoretic') fmatc3='C07BB07' .
If (fmatc4='C07AB07' and fmmed4='emcoretic') fmatc4='C07BB07' .
If (fmatc5='C07AB07' and fmmed5='emcoretic') fmatc5='C07BB07' .
If (fmatc6='C07AB07' and fmmed6='emcoretic') fmatc6='C07BB07' .
If (fmatc7='C07AB07' and fmmed7='emcoretic') fmatc7='C07BB07' .
If (fmatc8='C07AB07' and fmmed8='emcoretic') fmatc8='C07BB07' .

*atenolol/chloortalidon          C07AB03          --> C07CB03. is al goed
If (fmatc1='C07AB03' and fmmed1='atenolol/chloortalidon') fmatc1='C07CB03' .
If (fmatc2='C07AB03' and fmmed2='atenolol/chloortalidon') fmatc2='C07CB03' .
If (fmatc3='C07AB03' and fmmed3='atenolol/chloortalidon') fmatc3='C07CB03' .
If (fmatc4='C07AB03' and fmmed4='atenolol/chloortalidon') fmatc4='C07CB03' .
If (fmatc5='C07AB03' and fmmed5='atenolol/chloortalidon') fmatc5='C07CB03' .
If (fmatc6='C07AB03' and fmmed6='atenolol/chloortalidon') fmatc6='C07CB03' .
If (fmatc7='C07AB03' and fmmed7='atenolol/chloortalidon') fmatc7='C07CB03' .
If (fmatc8='C07AB03' and fmmed8='atenolol/chloortalidon') fmatc8='C07CB03' .

*C08.
*no errors.

*C09.
*no errors.

*create a string variable that consists of the first 3 characters of the ATC code.
string f_3ATC1(a30).
COMPUTE f_3ATC1 = CHAR.SUBSTR(fmatc1,1,3) .
string f_3ATC2(a30).
COMPUTE f_3ATC2 = CHAR.SUBSTR(fmatc2,1,3) .
string f_3ATC3(a30).
COMPUTE f_3ATC3 = CHAR.SUBSTR(fmatc3,1,3) .
string f_3ATC4(a30).
COMPUTE f_3ATC4 = CHAR.SUBSTR(fmatc4,1,3) .
string f_3ATC5(a30).
COMPUTE f_3ATC5 = CHAR.SUBSTR(fmatc5,1,3) .
string f_3ATC6(a30).
COMPUTE f_3ATC6 = CHAR.SUBSTR(fmatc6,1,3) .
string f_3ATC7(a30).
COMPUTE f_3ATC7 = CHAR.SUBSTR(fmatc7,1,3) .
```

```
string f_3ATC8(a30).
COMPUTE f_3ATC8 = CHAR.SUBSTR(fmatc8,1,3) .

*create a string variable that consists of the first 4 characters of the ATC code.
string f_4ATC1(a30).
COMPUTE f_4ATC1 = CHAR.SUBSTR(fmatc1,1,4) .
string f_4ATC2(a30).
COMPUTE f_4ATC2 = CHAR.SUBSTR(fmatc2,1,4) .
string f_4ATC3(a30).
COMPUTE f_4ATC3 = CHAR.SUBSTR(fmatc3,1,4) .
string f_4ATC4(a30).
COMPUTE f_4ATC4 = CHAR.SUBSTR(fmatc4,1,4) .
string f_4ATC5(a30).
COMPUTE f_4ATC5 = CHAR.SUBSTR(fmatc5,1,4) .
string f_4ATC6(a30).
COMPUTE f_4ATC6 = CHAR.SUBSTR(fmatc6,1,4) .
string f_4ATC7(a30).
COMPUTE f_4ATC7 = CHAR.SUBSTR(fmatc7,1,4) .
string f_4ATC8(a30).
COMPUTE f_4ATC8 = CHAR.SUBSTR(fmatc8,1,4) .

*create a string variable that consists of the first 5 characters of the ATC code.
string f_5ATC1(a30).
COMPUTE f_5ATC1 = CHAR.SUBSTR(fmatc1,1,5) .
string f_5ATC2(a30).
COMPUTE f_5ATC2 = CHAR.SUBSTR(fmatc2,1,5) .
string f_5ATC3(a30).
COMPUTE f_5ATC3 = CHAR.SUBSTR(fmatc3,1,5) .
string f_5ATC4(a30).
COMPUTE f_5ATC4 = CHAR.SUBSTR(fmatc4,1,5) .
string f_5ATC5(a30).
COMPUTE f_5ATC5 = CHAR.SUBSTR(fmatc5,1,5) .
string f_5ATC6(a30).
COMPUTE f_5ATC6 = CHAR.SUBSTR(fmatc6,1,5) .
string f_5ATC7(a30).
COMPUTE f_5ATC7 = CHAR.SUBSTR(fmatc7,1,5) .
string f_5ATC8(a30).
COMPUTE f_5ATC8 = CHAR.SUBSTR(fmatc8,1,5) .
EXECUTE.

*fmed_ino: no errors.
*med_ang no errors.

*fmed_ari: C01B.
RECODE fmed_ari (ELSE=COPY) INTO fmed_ari_or.
VARIABLE LABELS  fmed_ari_or 'origineel'.
EXECUTE.
RECODE fmed_ari (ELSE=-3).
EXECUTE.
If (fmvar13 le -1) fmed_ari=-1.
If (fmvar13=2 or fmvar13=1) fmed_ari=0.
```

If (f_4ATC1='C01B' OR f_4ATC2='C01B' OR f_4ATC3='C01B' OR f_4ATC4='C01B' OR f_4ATC5='C01B'
OR f_4ATC6='C01B' OR f_4ATC7='C01B' OR f_4ATC8='C01B') fmed_ari=1.
EXECUTE.

*med_diu: C03.
RECODE fmed_diu (ELSE=COPY) INTO fmed_diu_or.
VARIABLE LABELS fmed_diu_or 'origineel'.
EXECUTE.
RECODE fmed_diu (ELSE=-3).
EXECUTE.
If (fmvar13 le -1) fmed_diu=-1.
If (fmvar13=2 or fmvar13=1) fmed_diu=0.
If (f_3ATC1='C03' OR f_3ATC2='C03' OR f_3ATC3='C03' OR f_3ATC4='C03' OR f_3ATC5='C03' OR
f_3ATC6='C03' OR f_3ATC7='C03' OR f_3ATC8='C03') fmed_diu=1.
EXECUTE.

*some diuretics are combination preps and therefore (incorrectly) not included in the diuretics
variable.
*C07B C07C C07D C02L C09BA C09DA C08G .
If (f_4ATC1='C07B' OR f_4ATC2='C07B' OR f_4ATC3='C07B' OR f_4ATC4='C07B' OR f_4ATC5='C07B'
OR f_4ATC6='C07B' OR
f_4ATC7='C07B' OR f_4ATC8='C07B') fmed_diu=1.
If (f_4ATC1='C07C' OR f_4ATC2='C07C' OR f_4ATC3='C07C' OR f_4ATC4='C07C' OR f_4ATC5='C07C'
OR f_4ATC6='C07C' OR
f_4ATC7='C07C' OR f_4ATC8='C07C') fmed_diu=1.
If (f_4ATC1='C07D' OR f_4ATC2='C07D' OR f_4ATC3='C07D' OR f_4ATC4='C07D' OR f_4ATC5='C07D'
OR f_4ATC6='C07D' OR
f_4ATC7='C07D' OR f_4ATC8='C07D') fmed_diu=1.
If (f_4ATC1='C02L' OR f_4ATC2='C02L' OR f_4ATC3='C02L' OR f_4ATC4='C02L' OR f_4ATC5='C02L' OR
f_4ATC6='C02L' OR
f_4ATC7='C02L' OR f_4ATC8='C02L') fmed_diu=1.
If (f_5ATC1='C09BA' OR f_5ATC2='C09BA' OR f_5ATC3='C09BA' OR f_5ATC4='C09BA' OR
f_5ATC5='C09BA' OR f_5ATC6='C09BA' OR f_5ATC7='C09BA' OR f_5ATC8='C09BA') imed_diu=1.
If (f_5ATC1='C09DA' OR f_5ATC2='C09DA' OR f_5ATC3='C09DA' OR f_5ATC4='C09DA' OR
f_5ATC5='C09DA' OR f_5ATC6='C09DA' OR f_5ATC7='C09DA' OR f_5ATC8='C09DA') imed_diu=1.
If (f_4ATC1='C08G' OR f_4ATC2='C08G' OR f_4ATC3='C08G' OR f_4ATC4='C08G' OR f_4ATC5='C08G'
OR f_4ATC6='C08G' OR f_4ATC7='C08G' OR f_4ATC8='C08G') imed_diu=1.
EXECUTE.

*med_hyp: C02 C07 C08 C09.
RECODE fmed_hyp (ELSE=COPY) INTO fmed_hyp_or.
VARIABLE LABELS fmed_hyp_or 'origineel'.
EXECUTE.
RECODE fmed_hyp (ELSE=-3).
EXECUTE.
If (fmvar13 le -1) fmed_hyp=-1.
If (fmvar13=2 or fmvar13=1) fmed_hyp=0.
If (f_3ATC1='C02' OR f_3atc2='C02' OR f_3atc3='C02' OR f_3atc4='C02' OR f_3atc5='C02' OR
f_3atc6='C02' OR f_3atc7='C02' OR f_3atc8='C02') fmed_hyp=1.
If (f_3ATC1='C07' OR f_3atc2='C07' OR f_3atc3='C07' OR f_3atc4='C07' OR f_3atc5='C07' OR
f_3atc6='C07' OR f_3atc7='C07' OR f_3atc8='C07') fmed_hyp=1.

If (f_3ATC1='C08' OR f_3atc2='C08' OR f_3atc3='C08' OR f_3atc4='C08' OR f_3atc5='C08' OR
f_3atc6='C08' OR f_3atc7='C08' OR f_3atc8='C08') fmed_hyp=1.
If (f_3ATC1='C09' OR f_3atc2='C09' OR f_3atc3='C09' OR f_3atc4='C09' OR f_3atc5='C09' OR
f_3atc6='C09' OR f_3atc7='C09' OR f_3atc8='C09') fmed_hyp=1.
EXECUTE.

*create a variable: use of beta blocking agents (atc code C07, thus includes combination preparaten)
yes/no.
compute fmed_beta=0.
If (fmvar13 le -1) fmed_beta=-1.
If (f_3ATC1='C07' OR f_3ATC2='C07' OR f_3ATC3='C07' OR f_3ATC4='C07' OR f_3ATC5='C07' OR
f_3ATC6='C07' OR
f_3ATC7='C07' OR f_3ATC8='C07') fmed_beta=1.
VARIABLE LABELS fmed_beta 'use of beta blocking agents'.
VALUE LABELS fmed_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*create a variable: use of anticoagulant drugs (vitamine K antagonists, DOACs, dabigatran (atc codes
B01AA, B01AF, B01AE)) yes/no.
compute fmed_stolling=0.
If (fmvar13 le -1) fmed_stolling=-1.
If (f_5ATC1='B01AA' OR f_5ATC2='B01AA' OR f_5ATC3='B01AA' OR f_5ATC4='B01AA' OR
f_5ATC5='B01AA' OR f_5ATC6='B01AA' OR
f_5ATC7='B01AA') fmed_stolling=1.
If (f_5ATC1='B01AF' OR f_5ATC2='B01AF' OR f_5ATC3='B01AF' OR f_5ATC4='B01AF' OR
f_5ATC5='B01AF' OR f_5ATC6='B01AF' OR
f_5ATC7='B01AF' OR f_5ATC8='B01AF') fmed_stolling=1.
If (f_5ATC1='B01AE' OR f_5ATC2='B01AE' OR f_5ATC3='B01AE' OR f_5ATC4='B01AE' OR
f_5ATC5='B01AE' OR f_5ATC6='B01AE' OR
f_5ATC7='B01AE' OR f_5ATC8='B01AE') fmed_stolling=1.
VARIABLE LABELS fmed_stolling 'use of anticoagulants'.
VALUE LABELS fmed_stolling
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*combining anticoagulants and betablocking agents: use of both, yes/no.
compute fmed_stol_beta=-3.
If (fmed_stolling=-1) fmed_stol_beta=-1.
If (fmed_stolling=1 and fmed_beta=1) fmed_stol_beta=1.
If (fmed_stolling=0 or fmed_beta=0) fmed_stol_beta=0.
VARIABLE LABELS fmed_stol_beta 'use of both beta blocking agent AND anticoagulantia'.
VALUE LABELS fmed_stol_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

```
**********************year of interview (2005 or 2006).
COMPUTE t6_year=XDATE.YEAR(t6_dat).
VARIABLE LABELS t6_year "LASA main interview year (w6)".
VARIABLE LEVEL t6_year(SCALE).
FORMATS t6_year(F8.0).
VARIABLE WIDTH t6_year(8).
EXECUTE.

*********************ARRHYTHMIA (ARI) at F*********************.
*Selfreport surgery implantation of pacemaker.
COMPUTE f_surARI=-3.
IF (fhart15d le -1) f_surARI=-1.
IF (fhart01 le -1) f_surARI=-1.
IF (fhart15 le -1) f_surARI=-1.
IF (fhart01=0 or fhart01=1) f_surARI=0.
IF (fhart15d=0) f_surARI=0.
IF (fhart15=1) f_surARI=0.
IF (fhart15d=1) f_surARI=1.
VARIABLE LABELS f_surARI 'self report surgery: pacemaker'.
VALUE LABELS f_surARI
        -1 'missing'
        0 'no'
        1 'yes'.

*use of anti arrythmic medication.
RECODE fmed_ARI (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO f_mARI.
IF (fmed_ino=1) f_mARI=1.
IF (fmvar13=1) f_mARI=0.
IF (fmvar13 le -1) f_mARI=-1.
VARIABLE LABELS  f_mARI 'use of antiarrhythmics'.
VALUE LABELS f_mARI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of ARI.
COMPUTE f_gpARI=-3.
IF (fgarrth le -1) f_gpARI=-1.
IF (t6_year le -1) f_gpARI=-2.
IF (fgarrth=0) f_gpARI=0.
IF (fgarrth=1 and fgarrthy ge 6) f_gpARI=0.
IF (fgarrth=1 and fgarrthy=5 and t6_year=2005) f_gpARI=0.
IF (fgarrth=1 and (fgarrthy ge 2 and fgarrthy le 4)) f_gpARI=1.
IF (fgarrth=1 and fgarrthy=5 and t6_YEAR=2006) f_gpARI=1.
IF (fgarrth=1 and fgarrthy le -1) f_gpARI=2.
IF (fgarrth=1 and fgarrthy=1) f_gpARI=1.
IF (egarrth=1) f_gpARI=1.
IF (cgarrth=1) f_gpARI=1.
```

If (f_gpARI=-1 AND hgarrth=0) f_gpARI=0.
If (f_gpARI=-1 AND hgarrth=1 AND hgarrthy ge 2) f_gpARI=0.
If (f_gpARI=-1 AND hgarrth=1 AND hgarrthy le 1) f_gpARI=2.
VARIABLE LABELS f_gpARI 'gp diagnosis: cardiac arrhythmia'.
VALUE LABELS f_gpARI
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*ARI algorithm: medication, GP diagnosis and SR implantation of pacemaker combined.
compute f_alg_ARI=-3.
IF (f_mARI=1) f_alg_ARI=1.
IF (f_mARI=0 and f_gpARI=1 and (fmed_stol_beta=1)) f_alg_ARI=1.
IF (f_mARI=0 and f_gpARI=1 and (fmed_stol_beta=0) and fgarrths=1) f_alg_ARI=1.
IF (f_mARI=0 and f_gpARI=1 and (fmed_stol_beta=0) and fgarrths le 0 and f_surARI=1) f_alg_ARI=1.
IF (f_mARI=0 and f_gpARI=1 and (fmed_stol_beta=0) and fgarrths le 0 and f_surARI le 0) f_alg_ARI=2.
IF (f_mARI=0 and f_gpARI=0 and f_surARI=1) f_alg_ARI=3.
IF (f_mARI=0 and f_gpARI=0 and f_surARI le 0) f_alg_ARI=0.
IF (f_mARI=0 and f_gpARI=2 and (fmed_stol_beta=1)) f_alg_ARI=1.
IF (f_mARI=0 and f_gpARI=2 and (fmed_stol_beta=0) and f_surARI=1) f_alg_ARI=1.
IF (f_mARI=0 and f_gpARI=2 and (fmed_stol_beta=0) and f_surARI le 0) f_alg_ARI=0.
IF (f_mARI=0 and f_gpARI=2 and (fmed_stol_beta=0) and f_surARI le -1) f_alg_ARI=0.
IF (f_mARI=0 and f_gpARI=-1 and f_surARI=1) f_alg_ARI=2.
IF (f_mARI=0 and f_gpARI=-1 and (fmed_stol_beta=0) and f_surARI=0) f_alg_ARI=0.
IF (f_mARI=0 and f_gpARI=-1 and (fmed_stol_beta=0) and f_surARI le -1) f_alg_ARI=-1.
IF (f_mARI=0 and f_gpARI=-1 and (fmed_stol_beta=1) and f_surARI le 0) f_alg_ARI=-1.
IF (f_mARI le -1 and f_gpARI=1 and fgarrths=1) f_alg_ARI=1.
IF (f_mARI le -1 and f_gpARI=1 and fgarrths le 0 and f_surARI=1) f_alg_ARI=1.
IF (f_mARI le -1 and f_gpARI=1 and fgarrths le 0 and f_surARI le 0) f_alg_ARI=2.
IF (f_mARI le -1 and f_gpARI=0 and f_surARI=1) f_alg_ARI=3.
IF (f_mARI le -1 and f_gpARI=0 and f_surARI le 0) f_alg_ARI=0.
IF (f_mARI le -1 and f_gpARI=2 and f_surARI=1) f_alg_ARI=1.
IF (f_mARI le -1 and f_gpARI=2 and f_surARI le 0) f_alg_ARI=-1.
IF (f_mARI le -1 and f_gpARI le -1 and f_surARI=1) f_alg_ARI=2.
IF (f_mARI le -1 and f_gpARI le -1 and f_surARI le 0) f_alg_ARI=-1.
IF (f_alg_ARI=-1 and (ftrhart1=0 or ftphart1=0)) f_alg_ARI=0.
VARIABLE LABELS f_alg_ARI 'F wave: arrythmia'.
VALUE LABELS f_alg_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

********************CEREBROVASCULAR ACCIDENT (CVA) at F********************.
*Selfreport diagnosis of CVA.
COMPUTE f_srCVA=-3.
IF (fcva01=2 or fcva01=3) f_srCVA=1.
IF (fcva01=0 or fcva01=1) f_srCVA=0.
IF (ftpcva01=1) f_srCVA=1.
IF (ftpcva01=0) f_srCVA=0.

IF (ftrcva01=1) f_srCVA=1.
IF (ftrcva01=0) f_srCVA=0.
IF (fcva01 le -1 and ftpcva01 le -1 and ftrcva01 le -1) f_srCVA=-1.
VARIABLE LABELS f_srCVA 'self report: CVA'.
VALUE LABELS f_srCVA
         -1 'missing'
         0 'no'
         1 'yes'.

*GP diagnosis of CVA.
COMPUTE f_gpCVA=-3.
IF (fgcva le -1) f_gpCVA=-1.
IF (t6_year le -1) f_gpCVA=-2.
IF (fgcva=0) f_gpCVA=0.
IF (fgcva=1 and fgcvay ge 4) f_gpCVA=0.
IF (fgcva=1 and fgcvay ge 3 and t6_year=2005) f_gpCVA=0.
IF (fgcva=1 and (fgcvay ge 1 and fgcvay le 2)) f_gpCVA=1.
IF (fgcva=1 and fgcvay=3 and t6_YEAR=2006) f_gpCVA=1.
IF (fgcva=1 and fgcvay le -1) f_gpCVA=2.
IF (fgcva=1 and fgcvay=1) f_gpCVA=1.
IF (egcva=1) f_gpCVA=1.
IF (cgcva=1) f_gpCVA=1.
IF (bgcva=1) f_gpCVA=1.
If (f_gpCVA=-1 AND hgcva=0) f_gpCVA=0.
If (f_gpCVA=-1 AND hgcva=1 AND hgcvay ge 2) f_gpCVA=0.
If (f_gpCVA=-1 AND hgcva=1 AND hgcvay le 1) f_gpCVA=2.
VARIABLE LABELS f_gpCVA 'gp diagnosis: CVA'.
VALUE LABELS f_gpCVA
         -2 'dropout'
         -1 'missing'
         0 'no'
         1 'yes'
         2 'diagnose = yes, but year = missing'.

*CVA algorithm: GP diagnosis and SR combined.
COMPUTE f_alg_CVA=-3.
IF (f_gpCVA=1 and fgcvas=1) f_alg_CVA=1.
IF (f_gpCVA=1 and fgcvas le 0 and f_srCVA=1) f_alg_CVA=1.
IF (f_gpCVA=1 and fgcvas le 0 and f_srCVA=0) f_alg_CVA=3.
IF (f_gpCVA=1 and fgcvas le 0 and f_srCVA le -1) f_alg_CVA=2.
IF (f_gpCVA=0 and f_srCVA=1) f_alg_CVA=3.
IF (f_gpCVA=0 and f_srCVA=0) f_alg_CVA=0.
IF (f_gpCVA=0 and f_srCVA le -1) f_alg_CVA=0.
IF (f_gpCVA=2 and f_srCVA=1) f_alg_CVA=1.
IF (f_gpCVA=2 and f_srCVA=0) f_alg_CVA=0.
IF (f_gpCVA=2 and f_srCVA le -1) f_alg_CVA=-1.
IF (f_gpCVA le -1 and f_srCVA=1) f_alg_CVA=2.
IF (f_gpCVA le -1 and f_srCVA=0) f_alg_CVA=0.
IF (f_gpCVA le -1 and f_srCVA le -1) f_alg_CVA=-1.
VARIABLE LABELS f_alg_CVA 'F wave: cerebrovascular accident'.
VALUE LABELS f_alg_CVA
         -1 'missing'

0 'no'
1 'definite'
2 'possible'
3 'contradictory'.

*********************MYOCARDIAL INFARCTION (MI) at F*********************.
*Selfreport diagnosis of MI.
COMPUTE f_srMI=-5.
IF (fhart01 le -1) f_srMI=-1.
IF ((fhart01=2 or fhart01=3) and fhart05 le -1) f_srMI=-1.
IF (fhart05=1) f_srMI=0.
IF (fhart01=0 or fhart01=1) f_srMI=0.
IF (fhart05=2) f_srMI=1.
IF (ftphart1=0 or ftrhart1=0) f_srMI=0.
VARIABLE LABELS f_srMI 'self report: myocardial infarction'.
VALUE LABELS f_srMI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of MI.
COMPUTE f_gpmi=-3.
IF (fgmi le -1) f_gpMI=-1.
IF (t6_year le -1) f_gpMI=-1.
IF (fgmi=0) f_gpMI=0.
IF (fgmi=1 and fgmiy ge 4) f_gpMI=0.
IF (fgmi=1 and fgmiy ge 3 and t6_year=2005) f_gpMI=0.
IF (fgmi=1 and (fgmiy ge 1 and fgmiy le 2)) f_gpMI=1.
IF (fgmi=1 and (fgmiy=3 and t6_YEAR=2006)) f_gpMI=1.
IF (fgmi=1 and fgmiy le -1) f_gpMI=2.
IF (fgmi=1 and fgmiy=1) f_gpMI=1.
IF (egmi=1) f_gpMI=1.
IF (cgmi=1) f_gpMI=1.
If (f_gpmi=-1 AND hgmi=0) f_gpmi=0.
If (f_gpmi=-1 AND hgmi=1 AND hgmiy ge 2) f_gpmi=0.
If (f_gpmi=-1 AND hgmi=1 AND hgmiy le 1) f_gpmi=2.
VARIABLE LABELS f_gpMI 'gp diagnosis: MI'.
VALUE LABELS f_gpMI
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*MI algorithm: GP diagnosis and SR combined.
COMPUTE f_alg_MI=-3.
IF (f_gpMI=1 and fgmis=1) f_alg_MI=1.
IF (f_gpMI=1 and fgmis le 0 and f_srMI=1) f_alg_MI=1.
IF (f_gpMI=1 and fgmis le 0 and f_srMI=0) f_alg_MI=3.
IF (f_gpMI=1 and fgmis le 0 and f_srMI le -1) f_alg_MI=2.
IF (f_gpMI=0 and f_srMI=1) f_alg_MI=3.

IF (f_gpMI=0 and f_srMI=0) f_alg_MI=0.
IF (f_gpMI=0 and f_srMI le -1) f_alg_MI=0.
IF (f_gpMI=2 and f_srMI=1) f_alg_MI=1.
IF (f_gpMI=2 and f_srMI=0) f_alg_MI=0.
IF (f_gpMI=2 and f_srMI le -1) f_alg_MI=-1.
IF (f_gpMI le -1 and f_srMI=1) f_alg_MI=2.
IF (f_gpMI le -1 and f_srMI=0) f_alg_MI=0.
IF (f_gpMI le -1 and f_srMI le -1) f_alg_MI=-1.
VARIABLE LABELS f_alg_MI 'F wave: myocardial infarction'.
VALUE LABELS f_alg_MI
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'.

*********************ANGINA PECTORIS (AP) at F*********************.
*Selfreport diagnosis of AP.
COMPUTE f_srAP=-5.
IF (fhart01 le -1) f_srAP=-1.
IF ((fhart01=2 or fhart01=3) and fhart10 le -1) f_srAP=-1.
IF (fhart01=0 or fhart01=1) f_srAP=0.
IF (fhart11=1 or fdiabe12=1) f_srAP=0.
if (((fhart01=2 or fhart01=3) and fhart10=1) OR ((fdiabe01=2 or fdiabe01=3) and fdiabe11=1))
f_srAP=0.
IF (((fhart01=2 or fhart01=3) and fhart10 ge 4) OR ((fdiabe01=2 or fdiabe01=3) and fdiabe11 ge 4))
f_srAP=0.
IF (((fhart01=2 or fhart01=3) and fhart10=2 and fhart11 le -1) OR ((fdiabe01=2 or fdiabe01=3) and
fdiabe11=2 and fdiabe12 le -1)) f_srAP=2.
IF (fhart11=2 or fdiabe12=2) f_srAP=1.
IF (fhart10=3 or fdiabe11=3) f_srAP=1.
IF (ftphart1=0 or ftrhart1=0) f_srAP=0.
VARIABLE LABELS f_srAP 'self report: angina pectoris'.
VALUE LABELS f_srAP
          -1 'missing'
          0 'no'
          1 'yes'
          2 'possible'.

*GP diagnosis of AP.
COMPUTE f_gpAP=-3.
IF (fgap le -1) f_gpAP=-1.
IF (t6_year le -1) f_gpAP=-1.
IF (fgap=0) f_gpAP=0.
IF (fgap=1 and fgapy ge 4) f_gpAP=0.
IF (fgap=1 and fgapy ge 3 and t6_year=2005) f_gpAP=0.
IF (fgap=1 and (fgapy ge 1 and fgapy le 2)) f_gpAP=1.
IF (fgap=1 and (fgapy=3 and t6_YEAR=2006)) f_gpAP=1.
IF (fgap=1 and fgapy le -1) f_gpAP=2.
IF (fgap=1 and fgapy=1) f_gpAP=1.
IF (egap=1) f_gpAP=1.

```
IF (cgap=1) f_gpAP=1.
If (f_gpap=-1 AND hgap=0) f_gpap=0.
If (f_gpap=-1 AND hgap=1 AND hgapy ge 2) f_gpap=0.
If (f_gpap=-1 AND hgap=1 AND hgapy le 1) f_gpap=2.
VARIABLE LABELS f_gpAP 'gp diagnosis: angina pectoris'.
VALUE LABELS f_gpAP
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.


*use of AP medication: nitrates.
RECODE fmed_ang (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO f_mAP.
IF (fmvar13 le -1) f_mAP=-1.
IF (fmvar13=1) f_mAP=0.
VARIABLE LABELS  f_mAP 'use of nitrates'.
VALUE LABELS f_mAP
        -1 'missing'
        0 'no'
        1 'yes'.


*AP algorithm: medication, GP diagnosis and SR combined.
COMPUTE f_alg_AP=-3.
IF (f_mAP=1) f_alg_AP=1.
IF (f_mAP le 0 and f_srAP=1  and f_gpAP=1) f_alg_AP=1.
IF (f_mAP le 0 and f_srAP=1  and f_gpAP=0) f_alg_AP=3.
IF (f_mAP le 0 and f_srAP=1  and f_gpap=2) f_alg_AP=1.
IF (f_mAP le 0 and f_srAP=1  and f_gpAP le -1) f_alg_AP=2.
IF (f_mAP le 0 and f_srAP=0  and f_gpAP=1 and fgaps=1) f_alg_AP=1.
IF (f_mAP le 0 and f_srAP=0  and f_gpAP=1 and fgaps le 0) f_alg_AP=3.
IF (f_mAP le 0 and f_srAP=0  and f_gpAP=0) f_alg_AP=0.
IF (f_mAP le 0 and f_srAP=0  and f_gpap=2) f_alg_AP=0.
IF (f_mAP le 0 and f_srAP=0  and f_gpAP le -1) f_alg_AP=0.
IF (f_mAP le 0 and f_srAP=2  and f_gpAP=1) f_alg_AP=1.
IF (f_mAP le 0 and f_srAP=2  and f_gpAP=0) f_alg_AP=0.
IF (f_mAP le 0 and f_srAP=2  and f_gpAP=2) f_alg_AP=-1.
IF (f_mAP le 0 and f_srAP=2  and f_gpap=-1) f_alg_AP=-1.
IF (f_mAP le 0 and f_srAP le -1  and f_gpAP=1 and fgaps=1) f_alg_AP=1.
IF (f_mAP le 0 and f_srAP le -1  and f_gpAP=1 and fgaps le 0) f_alg_AP=2.
IF (f_mAP le 0 and f_srAP le -1  and f_gpAP=0) f_alg_AP=0.
IF (f_mAP le 0 and f_srAP le -1  and f_gpap=2) f_alg_AP=-1.
IF (f_mAP le 0 and f_srAP le -1  and f_gpAP le -1) f_alg_AP=-1.
VARIABLE LABELS f_alg_AP 'F wave: angina pectoris'.
VALUE LABELS f_alg_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.


*********************CONGESTIVE HEART FAILURE (CHF) at F********************.
```

*Selfreport diagnosis of CHF.
COMPUTE f_srCHF=-3.
IF (fhart01 le -1) f_srCHF=-1.
IF ((fhart01=2 or fhart01=3) and fhart12 le -1) f_srCHF=-1.
IF (fhart01=0 or fhart01=1) f_srCHF=0.
IF ((fhart01=2 or fhart01=3) and fhart12=1) f_srCHF=0.
IF ((fhart01=2 or fhart01=3) and fhart12=2) f_srCHF=1.
IF (ftphart1=0 or ftrhart1=0) f_srCHF=0.
VARIABLE LABELS f_srCHF 'self reported diagnosis of congestive heart failure'.
VALUE LABELS f_srCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CHF.
COMPUTE f_gpCHF=-3.
IF (fgchf le -1) f_gpCHF=-1.
IF (t6_year le -1) f_gpCHF=-1.
IF (fgchf=0) f_gpCHF=0.
IF (fgchf=1 and fgchfy ge 4) f_gpCHF=0.
IF (fgchf=1 and fgchfy ge 3 and t6_year=2005) f_gpCHF=0.
IF (fgchf=1 and (fgchfy ge 1 and fgchfy le 2)) f_gpCHF=1.
IF (fgchf=1 and (fgchfy=3 and t6_YEAR=2006)) f_gpCHF=1.
IF (fgchf=1 and fgchfy le -1) f_gpCHF=2.
IF (fgchf=1 and fgchfy=1) f_gpCHF=1.
IF (egchf=1) f_gpCHF=1.
IF (cgchf=1) f_gpCHF=1.
If (f_gpchf=-1 AND hgchf=0) f_gpchf=0.
If (f_gpchf=-1 AND hgchf=1 AND hgchfy ge 2) f_gpchf=0.
If (f_gpchf=-1 AND hgchf=1 AND hgchfy le 1) f_gpchf=2.
VARIABLE LABELS f_gpCHF 'gp diagnosis: congestive heart failure'.
VALUE LABELS f_gpCHF
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CHF medication: diuretics, antihypertensives, nitrates, inotropics, beta blocking agents.
compute f_mCHF=0.
if (fmed_diu=1 and (fmed_hyp=1 or fmed_ang=1 or fmed_ino=1 or fmed_beta=1)) f_mCHF=1.
IF (fmvar13 le -1) f_mCHF=-1.
IF (fmvar13=1) f_mCHF=0.
VARIABLE LABELS f_mCHF 'medication for congestive heart failure'.
VALUE LABELS f_mCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*CHF algorithm: medication, GP diagnosis and SR combined.
COMPUTE f_alg_CHF=-3.
IF (f_gpCHF=1 and fgchfs=1) f_alg_CHF=1.

IF (f_gpCHF=1 and fgchfs le 0 and f_srCHF=1) f_alg_CHF=1.
IF (f_gpCHF=1 and fgchfs le 0 and f_srCHF le 0 and f_mCHF=1) f_alg_CHF=1.
IF (f_gpCHF=1 and fgchfs le 0 and f_srCHF=0 and f_mCHF=0) f_alg_CHF=2.
IF (f_gpCHF=1 and fgchfs le 0 and f_srCHF le 0 and f_mCHF le -1) f_alg_CHF=2.
IF (f_gpCHF=1 and fgchfs le 0 and f_srCHF le -1 and f_mCHF le 0) f_alg_CHF=2.
IF (f_gpCHF=0 and f_srCHF=1 and f_mCHF=1) f_alg_CHF=1.
IF (f_gpCHF=0 and f_srCHF=1 and f_mCHF le 0) f_alg_CHF=2.
IF (f_gpCHF=0 and f_srCHF le 0 and f_mCHF=1) f_alg_CHF=3.
IF (f_gpCHF=0 and f_srCHF le 0 and f_mCHF le 0) f_alg_CHF=0.
IF (f_gpCHF=2 and f_srCHF=1) f_alg_CHF=1.
IF (f_gpCHF=2 and f_srCHF le 0 and f_mCHF=1) f_alg_CHF=1.
IF (f_gpCHF=2 and f_srCHF le 0 and f_mCHF le 0) f_alg_CHF=0.
IF (f_gpCHF=2 and f_srCHF=0 and f_mCHF=-1) f_alg_CHF=-1.
IF (f_gpCHF=2 and f_srCHF le -1 and f_mCHF le -1) f_alg_CHF=-1.
IF (f_gpCHF le -1 and f_srCHF=1 and f_mCHF=1) f_alg_CHF=1.
IF (f_gpCHF le -1 and f_srCHF=1 and f_mCHF le 0) f_alg_CHF=2.
IF (f_gpCHF le -1 and f_srCHF=0 and f_mCHF=1) f_alg_CHF=2.
IF (f_gpCHF le -1 and f_srCHF=0 and f_mCHF le 0) f_alg_CHF=0.
IF (f_gpCHF le -1 and f_srCHF le -1 and f_mCHF=1) f_alg_CHF=2.
IF (f_gpCHF le -1 and f_srCHF le -1 and f_mCHF=0) f_alg_CHF=0.
IF (f_gpCHF le -1 and f_srCHF le -1 and f_mCHF le -1) f_alg_CHF=-1.
VARIABLE LABELS f_alg_CHF 'F wave: congestive heart failure'.
VALUE LABELS f_alg_CHF
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************PERIPHERAL ARTERIAL DISEASE (PAD) at F*********************.
*Selfreport diagnosis of PAD.
COMPUTE f_srPAD=-5.
IF (fartvei1 le -1) f_srPAD=-1.
IF ((fartvei1=2 or fartvei1=3) and fartvei5 le -1) f_srPAD=-1.
IF (fartvei1=0 or fartvei1=1) f_srPAD=0.
IF (fartvei7=1 or fdiabe09=1) f_srPAD=0.
IF (fartvei5=1 or fdiabe07=1) f_srPAD=0.
IF ((fartvei5=2 and fartvei7 le -1) or (fdiabe07=2 and fdiabe09 le -1)) f_srPAD=2.
IF (fartvei7=2 or fdiabe09=2) f_srPAD=1.
IF (ftpartv1=0 OR ftrartv1=0) f_srPAD=0.
IF (ftpartv1=1 OR ftrartv1=1) f_srPAD=2.
IF (fartvei1 le -1 and ftpartv1 le -1 and ftrartv1 le -1) f_srPAD=-1.
VARIABLE LABELS f_srPAD 'self reported diagnosis of peripheral artery disease'.
VALUE LABELS f_srPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*Selfreport surgery.
COMPUTE f_surPAD=-3.
IF (fartvei1 le -1) f_surPAD=-1.

IF ((fartvei1=2 or fartvei1=3) and fartve8 le -1) f_surPAD=-1.
IF (fartve8=1) f_surPAD=0.
IF ((fartve8c=0 AND fartve8d=0) AND (fartve8b le 0)) f_surPAD=0.
IF (fartvei1=0 or fartvei1=1) f_surPAD=0.
IF ((fartve8c le 0 AND fartve8d le 0) AND (fartve8b=1)) f_surPAD=2.
IF (fartve8c=1 OR fartve8d=1) f_surPAD=1.
VARIABLE LABELS f_surPAD 'self reported surgery of peripheral arteries'.
VALUE LABELS f_surPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of PAD.
COMPUTE f_gpPAD=-3.
IF (fgartvei le -1) f_gpPAD=-1.
IF (t6_year le -1) f_gpPAD=-1.
IF (fgartvei=0) f_gpPAD=0.
IF (fgartvei=1 and fgartvey ge 4) f_gpPAD=0.
IF (fgartvei=1 and fgartvey ge 3 and t6_year=2005) f_gpPAD=0.
IF (fgartvei=1 and (fgartvey ge 1 and fgartvey le 2)) f_gpPAD=1.
IF (fgartvei=1 and (fgartvey=3 and t6_YEAR=2006)) f_gpPAD=1.
IF (fgartvei=1 and fgartvey le -1) f_gpPAD=2.
IF (fgartvei=1 and fgartvey=1) f_gpPAD=1.
IF (egartvei=1) f_gpPAD=1.
IF (cgartvei=1) f_gpPAD=1.
IF (bgclan=1) f_gpPAD=1.
If (f_gpPAD=-1 AND hgartvei=0) f_gpPAD=0.
If (f_gpPAD=-1 AND hgartvei=1 AND hgartvey ge 2) f_gpPAD=0.
If (f_gpPAD=-1 AND hgartvei=1 AND hgartvey le 1) f_gpPAD=2.
VARIABLE LABELS f_gpPAD 'gp diagnosis: PAD'.
VALUE LABELS f_gpPAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*PAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE f_alg_PAD=-3.
IF (f_surPAD=1) f_alg_PAD=1.
IF (f_surPAD le 0 and f_gpPAD=1 and fgartves=1) f_alg_PAD=1.
IF (f_surPAD le 0 and f_gpPAD=1 and fgartves le 0 and f_srPAD=1) f_alg_PAD=1.
IF (f_surPAD le 0 and f_gpPAD=1 and fgartves le 0 and f_srPAD=0) f_alg_PAD=3.
IF (f_surPAD le 0 and f_gpPAD=1 and fgartves le 0 and f_srPAD le -1) f_alg_PAD=2.
IF (f_surPAD le 0 and f_gpPAD=1 and fgartves le 0 and f_srPAD=2) f_alg_PAD=1.
IF (f_surPAD le 0 and f_gpPAD=0 and f_srPAD=1) f_alg_PAD=3.
IF (f_surPAD le 0 and f_gpPAD=0 and f_srPAD=0) f_alg_PAD=0.
IF (f_surPAD le 0 and f_gpPAD=0 and f_srPAD le -1) f_alg_PAD=0.
IF (f_surPAD le 0 and f_gpPAD=0 and f_srPAD=2) f_alg_PAD=0.
IF (f_surPAD le 0 and f_gpPAD=2 and f_srPAD=1) f_alg_PAD=1.
IF (f_surPAD le 0 and f_gpPAD=2 and f_srPAD=0) f_alg_PAD=0.

IF (f_surPAD le 0 and f_gpPAD=2 and f_srPAD le -1) f_alg_PAD=-1.
IF (f_surPAD le 0 and f_gpPAD=2 and f_srPAD=2) f_alg_PAD=1.
IF (f_surPAD le 0 and f_gpPAD le -1 and f_srPAD=1) f_alg_PAD=2.
IF (f_surPAD le 0 and f_gpPAD le -1 and f_srPAD=0) f_alg_PAD=0.
IF (f_surPAD le 0 and f_gpPAD le -1 and f_srPAD le -1) f_alg_PAD=-1.
IF (f_surPAD le 0 and f_gpPAD le -1 and f_srPAD=2) f_alg_PAD=-1.
IF (f_surPAD=2 and f_gpPAD=1) f_alg_PAD=1.
IF (f_surPAD=2 and f_gpPAD=0 and f_srPAD=1) f_alg_PAD=1.
IF (f_surPAD=2 and f_gpPAD=0 and f_srPAD=0) f_alg_PAD=0.
IF (f_surPAD=2 and f_gpPAD=0 and f_srPAD le -1) f_alg_PAD=0.
IF (f_surPAD=2 and f_gpPAD=0 and f_srPAD=2) f_alg_PAD=3.
IF (f_surPAD=2 and f_gpPAD=2 and f_srPAD=1) f_alg_PAD=1.
IF (f_surPAD=2 and f_gpPAD le -1 and f_srPAD=1) f_alg_PAD=1.
IF (f_surPAD=2 and f_gpPAD le -1 and f_srPAD=0) f_alg_PAD=0.
IF (f_surPAD=2 and f_gpPAD le -1 and f_srPAD le -1) f_alg_PAD=-1.
IF (f_surPAD=2 and f_gpPAD le -1 and f_srPAD=2) f_alg_PAD=-1.
VARIABLE LABELS f_alg_PAD 'F wave algorithm: peripheral artery disease'.
VALUE LABELS f_alg_PAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CORONARY ARTERY DISEASE (CAD) at F********************.
*CAD Selfreport surgery.
COMPUTE f_surCAD=-3.
IF ((fhart01=2 or fhart01=3) and fhart15 le -1) f_surCAD=-1.
IF (fhart01 le -1) f_surCAD=-1.
IF (fhart15b le -1 AND fhart15c le -1) f_surCAD=-1.
IF (fhart15b=0 AND fhart15c=0) f_surCAD=0.
IF (fhart15=1) f_surCAD=0.
IF (fhart01=0 or fhart01=1) f_surCAD=0.
IF (fhart15b=1 OR fhart15c=1) f_surCAD=1.
VARIABLE LABELS f_surCAD 'self reported surgery of coronary arteries'.
VALUE LABELS f_surCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*CAD selfreport (=Selfreport of AP or MI).
COMPUTE f_srCAD=-5.
IF (fhart01 le -1) f_srCAD=-1.
IF (f_srMI=0 AND f_srAP=2) f_srCAD=-1.
IF (f_srMI=0 AND f_srAP le -1) f_srCAD=-1.
IF (f_srMI le -1 AND f_srAP=0) f_srCAD=-1.
IF (f_srMI le -1 AND f_srAP=2) f_srCAD=-1.
IF (f_srMI le -1 AND f_srAP le -1) f_srCAD=-1.
IF (f_srMI=0 AND f_srAP=0) f_srCAD=0.
IF (fhart01=0 or fhart01=1) f_srCAD=0.
IF (f_srMI le -1 AND f_srAP=1) f_srCAD=1.
IF (f_srMI=1) f_srCAD=1.

IF (f_srAP=1) f_srCAD=1.
IF (ftphart1=0 or ftrhart1=0) f_srCAD=0.
VARIABLE LABELS f_srCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS f_srCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CAD (gp diagnosis of AP or MI).
COMPUTE f_gpCAD=-5.
IF (f_gpMI le -1 AND f_gpAP=0) f_gpCAD=-1.
IF (f_gpMI=0 AND f_gpAP le -1) f_gpCAD=-1.
IF (f_gpMI le -1 AND f_gpAP le -1) f_gpCAD=-1.
IF (f_gpMI=0 AND f_gpAP=0) f_gpCAD=0.
IF (f_gpMI=0 AND f_gpAP=2) f_gpCAD=2.
IF (f_gpMI le -1 AND f_gpAP=2) f_gpCAD=2.
IF (f_gpMI=2 AND f_gpAP=0) f_gpCAD=2.
IF (f_gpMI=2 AND f_gpAP=2) f_gpCAD=2.
IF (f_gpMI=2 AND f_gpAP le -1) f_gpCAD=2.
IF (f_gpMI=1) f_gpCAD=1.
IF (f_gpAP=1) f_gpCAD=1.
IF (t6_year le -1) f_gpCAD=-2.
VARIABLE LABELS f_gpCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS f_gpCAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE f_alg_CAD=-3.
IF (f_mAP le 0 and f_surCAD le 0 and f_srMI le 0 and (f_srAP le 0 or f_srAP=2) and f_gpMI le 0)
f_alg_CAD=0.
IF (f_mAP le -1 and f_surCAD le -1 and f_srMI le -1 and f_srAP le -1 and f_gpAP le -1 and f_gpMI le -1)
f_alg_CAD=-1.
IF (f_mAP=0 and f_surCAD=0 and f_srMI=0 and f_srAP=0 and f_gpAP=0 and f_gpMI=0) f_alg_CAD=0.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_srAP=1 and (f_srMI le 0 and f_gpAP le 0 and f_gpMI le 0)))
f_alg_CAD=3.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_srMI=1 and (f_srAP le 0 and f_gpAP le 0 and f_gpMI le 0)))
f_alg_CAD=3.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpAP=1 and fgaps le 0 and (f_gpMI le 0 or f_gpMI=2) and
f_srAP le 0 and f_srMI le 0)) f_alg_CAD=3.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpMI=1 and fgmis le 0 and (f_gpAP le 0 or f_gpAP=2) and
f_srAP le 0 and f_srMI le 0)) f_alg_CAD=3.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_srAP=1 and (f_srMI le -1 and f_gpAP le -1 and f_gpMI le -1)))
f_alg_CAD=2.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_srMI=1 and (f_srAP le -1 and f_gpAP le -1 and f_gpMI le -1)))
f_alg_CAD=2.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpAP=1 and fgaps le 0 and f_gpMI le -1 and f_srAP le -1 and
f_srMI le -1)) f_alg_CAD=2.

IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpMI=1 and fgmis le 0 and f_gpAP le -1 and f_srAP le -1 and f_srMI le -1)) f_alg_CAD=2.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpAP=2 and (f_gpMI le 0 or f_gpMI=2) and (f_srAP le 0 or f_srAP=2) and f_srMI le 0)) f_alg_CAD=0.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpMI=2 and (f_gpAP le 0 or f_gpAP=2) and (f_srAP le 0 or f_srAP=2) and f_srMI le 0)) f_alg_CAD=0.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpAP=2 and (f_gpMI le -1 or f_gpMI=2) and (f_srAP le -1 or f_srAP=2) and f_srMI le -1)) f_alg_CAD=-1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpMI=2 and (f_gpAP le -1 or f_gpAP=2) and (f_srAP le -1 or f_srAP=2) and f_srMI le -1)) f_alg_CAD=-1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_srAP=1 and (f_srMI=1 OR f_gpAP=1 OR f_gpMI=1))) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_srMI=1 and (f_srAP=1 OR f_gpAP=1 OR f_gpMI=1))) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpAP=1 and fgaps=1)) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpMI=1 and fgmis=1)) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpAP=1 and fgaps le 0) and (f_srMI=1 or f_srAP=1 or f_gpMI=1)) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpMI=1 and fgmis le 0) and (f_srMI=1 or f_srAP=1 or f_gpAP=1)) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_srAP=1 and f_srMI le 0) and (f_gpAP=2 or f_gpMI=2)) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_srMI=1) and (f_gpAP=2 or f_srAP=2 or f_gpMI=2)) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpAP=1 and f_srMI le 0) and (f_srAP=2 and f_gpMI=2)) f_alg_CAD=1.
IF ((f_mAP le 0 and f_surCAD le 0) and (f_gpMI=1 and f_srMI le 0) and (f_gpAP=2 or f_srAP=2)) f_alg_CAD=1.
IF (f_mAP=1 or f_surCAD=1) f_alg_CAD=1.
VARIABLE LABELS f_alg_CAD 'F wave: coronary artery disease'.
VALUE LABELS f_alg_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************G wave*****************.
*create a string variable that consists of the first 3 characters of the ATC code.
string g_3ATC1(a30).
COMPUTE g_3ATC1 = CHAR.SUBSTR(gmatc1,1,3) .
string g_3ATC2(a30).
COMPUTE g_3ATC2 = CHAR.SUBSTR(gmatc2,1,3) .
string g_3ATC3(a30).
COMPUTE g_3ATC3 = CHAR.SUBSTR(gmatc3,1,3) .
string g_3ATC4(a30).
COMPUTE g_3ATC4 = CHAR.SUBSTR(gmatc4,1,3) .
string g_3ATC5(a30).
COMPUTE g_3ATC5 = CHAR.SUBSTR(gmatc5,1,3) .
string g_3ATC6(a30).
COMPUTE g_3ATC6 = CHAR.SUBSTR(gmatc6,1,3) .
string g_3ATC7(a30).

```
COMPUTE g_3ATC7 = CHAR.SUBSTR(gmatc7,1,3) .
string g_3ATC8(a30).
COMPUTE g_3ATC8 = CHAR.SUBSTR(gmatc8,1,3) .
string g_3ATC9(a30).
COMPUTE g_3ATC9 = CHAR.SUBSTR(gmatc9,1,3) .
string g_3ATC10(a30).
COMPUTE g_3ATC10 = CHAR.SUBSTR(gmatc10,1,3) .
string g_3ATC11(a30).
COMPUTE g_3ATC11 = CHAR.SUBSTR(gmatc11,1,3) .
string g_3ATC12(a30).
COMPUTE g_3ATC12 = CHAR.SUBSTR(gmatc12,1,3) .
string g_3ATC13(a30).
COMPUTE g_3ATC13 = CHAR.SUBSTR(gmatc13,1,3) .
string g_3ATC14(a30).
COMPUTE g_3ATC14 = CHAR.SUBSTR(gmatc14,1,3) .
string g_3ATC15(a30).
COMPUTE g_3ATC15 = CHAR.SUBSTR(gmatc15,1,3) .
string g_3ATC16(a30).
COMPUTE g_3ATC16 = CHAR.SUBSTR(gmatc16,1,3) .

*create a string variable that consists of the first 4 characters of the ATC code.
string g_4ATC1(a30).
COMPUTE g_4ATC1 = CHAR.SUBSTR(gmatc1,1,4) .
string g_4ATC2(a30).
COMPUTE g_4ATC2 = CHAR.SUBSTR(gmatc2,1,4) .
string g_4ATC3(a30).
COMPUTE g_4ATC3 = CHAR.SUBSTR(gmatc3,1,4) .
string g_4ATC4(a30).
COMPUTE g_4ATC4 = CHAR.SUBSTR(gmatc4,1,4) .
string g_4ATC5(a30).
COMPUTE g_4ATC5 = CHAR.SUBSTR(gmatc5,1,4) .
string g_4ATC6(a30).
COMPUTE g_4ATC6 = CHAR.SUBSTR(gmatc6,1,4) .
string g_4ATC7(a30).
COMPUTE g_4ATC7 = CHAR.SUBSTR(gmatc7,1,4) .
string g_4ATC8(a30).
COMPUTE g_4ATC8 = CHAR.SUBSTR(gmatc8,1,4) .
string g_4ATC9(a30).
COMPUTE g_4ATC9 = CHAR.SUBSTR(gmatc9,1,4) .
string g_4ATC10(a30).
COMPUTE g_4ATC10 = CHAR.SUBSTR(gmatc10,1,4) .
string g_4ATC11(a30).
COMPUTE g_4ATC11 = CHAR.SUBSTR(gmatc11,1,4) .
string g_4ATC12(a30).
COMPUTE g_4ATC12 = CHAR.SUBSTR(gmatc12,1,4) .
string g_4ATC13(a30).
COMPUTE g_4ATC13 = CHAR.SUBSTR(gmatc13,1,4) .
string g_4ATC14(a30).
COMPUTE g_4ATC14 = CHAR.SUBSTR(gmatc14,1,4) .
string g_4ATC15(a30).
COMPUTE g_4ATC15 = CHAR.SUBSTR(gmatc15,1,4) .
string g_4ATC16(a30).
```

```
COMPUTE g_4ATC16 = CHAR.SUBSTR(gmatc16,1,4) .

*create a string variable that consists of the first 5 characters of the ATC code.
string g_5ATC1(a30).
COMPUTE g_5ATC1 = CHAR.SUBSTR(gmatc1,1,5) .
string g_5ATC2(a30).
COMPUTE g_5ATC2 = CHAR.SUBSTR(gmatc2,1,5) .
string g_5ATC3(a30).
COMPUTE g_5ATC3 = CHAR.SUBSTR(gmatc3,1,5) .
string g_5ATC4(a30).
COMPUTE g_5ATC4 = CHAR.SUBSTR(gmatc4,1,5) .
string g_5ATC5(a30).
COMPUTE g_5ATC5 = CHAR.SUBSTR(gmatc5,1,5) .
string g_5ATC6(a30).
COMPUTE g_5ATC6 = CHAR.SUBSTR(gmatc6,1,5) .
string g_5ATC7(a30).
COMPUTE g_5ATC7 = CHAR.SUBSTR(gmatc7,1,5) .
string g_5ATC8(a30).
COMPUTE g_5ATC8 = CHAR.SUBSTR(gmatc8,1,5) .
string g_5ATC9(a30).
COMPUTE g_5ATC9 = CHAR.SUBSTR(gmatc9,1,5) .
string g_5ATC10(a30).
COMPUTE g_5ATC10 = CHAR.SUBSTR(gmatc10,1,5) .
string g_5ATC11(a30).
COMPUTE g_5ATC11 = CHAR.SUBSTR(gmatc11,1,5) .
string g_5ATC12(a30).
COMPUTE g_5ATC12 = CHAR.SUBSTR(gmatc12,1,5) .
string g_5ATC13(a30).
COMPUTE g_5ATC13 = CHAR.SUBSTR(gmatc13,1,5) .
string g_5ATC14(a30).
COMPUTE g_5ATC14 = CHAR.SUBSTR(gmatc14,1,5) .
string g_5ATC15(a30).
COMPUTE g_5ATC15 = CHAR.SUBSTR(gmatc15,1,5) .
string g_5ATC16(a30).
COMPUTE g_5ATC16 = CHAR.SUBSTR(gmatc16,1,5) .
EXECUTE.

*create a variable: use of beta blocking agents (atc code C07, thus includes combination preparaten)
yes/no.
compute gmed_beta=0.
If (gmvar13 le -1) gmed_beta=-1.
If (g_3ATC1='C07' OR g_3ATC2='C07' OR g_3ATC3='C07' OR g_3ATC4='C07' OR g_3ATC5='C07' OR
g_3ATC6='C07' OR
g_3ATC7='C07' OR g_3ATC8='C07' OR g_3ATC9='C07' OR g_3ATC10='C07' OR g_3ATC11='C07' OR
g_3ATC12='C07' OR g_3ATC13='C07' OR
g_3ATC14='C07' OR g_3ATC15='C07' OR g_3ATC16='C07') gmed_beta=1.
VARIABLE LABELS gmed_beta 'use of beta blocking agents'.
VALUE LABELS   gmed_beta
          -1 'missing'
          0 'no'
          1 'yes'.
EXECUTE.
```

*create a variable: use of anticoagulant drugs (vitamine K antagonists, DOACs, dabigatran (atc codes B01AA, B01AF, B01AE)) yes/no.
compute gmed_stolling=0.
If (gmvar13 le -1) gmed_stolling=-1.
If (g_5ATC1='B01AA' OR g_5ATC2='B01AA' OR g_5ATC3='B01AA' OR g_5ATC4='B01AA' OR g_5ATC5='B01AA' OR g_5ATC6='B01AA' OR
g_5ATC7='B01AA' OR g_5ATC8='B01AA' OR g_5ATC9='B01AA' OR g_5ATC10='B01AA' OR g_5ATC11='B01AA' OR g_5ATC12='B01AA' OR g_5ATC13='B01AA' OR
g_5ATC14='B01AA' OR g_5ATC15='B01AA' OR g_5ATC16='B01AA') gmed_stolling=1.
If (g_5ATC1='B01AF' OR g_5ATC2='B01AF' OR g_5ATC3='B01AF' OR g_5ATC4='B01AF' OR g_5ATC5='B01AF' OR g_5ATC6='B01AF' OR
g_5ATC7='B01AF' OR g_5ATC8='B01AF' OR g_5ATC9='B01AF' OR g_5ATC10='B01AF' OR g_5ATC11='B01AF' OR g_5ATC12='B01AF' OR g_5ATC13='B01AF' OR
g_5ATC14='B01AF' OR g_5ATC15='B01AF' OR g_5ATC16='B01AF') gmed_stolling=1.
If (g_5ATC1='B01AE' OR g_5ATC2='B01AE' OR g_5ATC3='B01AE' OR g_5ATC4='B01AE' OR g_5ATC5='B01AE' OR g_5ATC6='B01AE' OR
g_5ATC7='B01AE' OR g_5ATC8='B01AE' OR g_5ATC9='B01AE' OR g_5ATC10='B01AE' OR g_5ATC11='B01AE' OR g_5ATC12='B01AE' OR g_5ATC13='B01AE' OR
g_5ATC14='B01AE' OR g_5ATC15='B01AE' OR g_5ATC16='B01AE') gmed_stolling=1.
VARIABLE LABELS gmed_stolling 'use of anticoagulants'.
VALUE LABELS gmed_stolling
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*combining anticoagulants and betablocking agents: use of both, yes/no.
compute gmed_stol_beta=-3.
If (gmed_stolling=-1) gmed_stol_beta=-1.
If (gmed_stolling=1 and gmed_beta=1) gmed_stol_beta=1.
If (gmed_stolling=0 or gmed_beta=0) gmed_stol_beta=0.
VARIABLE LABELS gmed_stol_beta 'use of both beta blocking agent AND anticoagulantia'.
VALUE LABELS gmed_stol_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*some diuretics are combination preps and therefore (incorrectly) not included in the diuretics variable.
*C07B C07C C07D C02L C09B C09D C08G
C09AX C09CX C01AA.

*C07B C07C C07D C02L C09B C09D C08G .
If (g_4ATC1='C07B' OR g_4ATC2='C07B' OR g_4ATC3='C07B' OR g_4ATC4='C07B' OR g_4ATC5='C07B' OR g_4ATC6='C07B' OR
g_4ATC7='C07B' OR g_4ATC8='C07B' OR g_4ATC9='C07B' OR g_4ATC10='C07B' OR g_4ATC11='C07B' OR g_4ATC12='C07B' OR g_4ATC13='C07B' OR
g_4ATC14='C07B' OR g_4ATC15='C07B' OR g_4ATC16='C07B') gmed_diu=1.
If (g_4ATC1='C07C' OR g_4ATC2='C07C' OR g_4ATC3='C07C' OR g_4ATC4='C07C' OR g_4ATC5='C07C' OR g_4ATC6='C07C' OR

g_4ATC7='C07C' OR g_4ATC8='C07C' OR g_4ATC9='C07C' OR g_4ATC10='C07C' OR g_4ATC11='C07C' OR g_4ATC12='C07C' OR g_4ATC13='C07C' OR
g_4ATC14='C07C' OR g_4ATC15='C07C' OR g_4ATC16='C07C') gmed_diu=1.
If (g_4ATC1='C07D' OR g_4ATC2='C07D' OR g_4ATC3='C07D' OR g_4ATC4='C07D' OR g_4ATC5='C07D' OR g_4ATC6='C07D' OR
g_4ATC7='C07D' OR g_4ATC8='C07D' OR g_4ATC9='C07D' OR g_4ATC10='C07D' OR g_4ATC11='C07D' OR g_4ATC12='C07D' OR g_4ATC13='C07D' OR
g_4ATC14='C07D' OR g_4ATC15='C07D' OR g_4ATC16='C07D') gmed_diu=1.
If (g_4ATC1='C02L' OR g_4ATC2='C02L' OR g_4ATC3='C02L' OR g_4ATC4='C02L' OR g_4ATC5='C02L' OR g_4ATC6='C02L' OR
g_4ATC7='C02L' OR g_4ATC8='C02L' OR g_4ATC9='C02L' OR g_4ATC10='C02L' OR g_4ATC11='C02L' OR g_4ATC12='C02L' OR g_4ATC13='C02L' OR
g_4ATC14='C02L' OR g_4ATC15='C02L' OR g_4ATC16='C02L') gmed_diu=1.
If (g_4ATC1='C09BA' OR g_4ATC2='C09BA' OR g_4ATC3='C09BA' OR g_4ATC4='C09BA' OR g_4ATC5='C09BA' OR g_4ATC6='C09BA' OR
g_4ATC7='C09BA' OR g_4ATC8='C09BA' OR g_4ATC9='C09BA' OR g_4ATC10='C09BA' OR g_4ATC11='C09BA' OR g_4ATC12='C09BA' OR g_4ATC13='C09BA' OR
g_4ATC14='C09BA' OR g_4ATC15='C09BA' OR g_4ATC16='C09BA') gmed_diu=1.
If (g_4ATC1='C09DA' OR g_4ATC2='C09DA' OR g_4ATC3='C09DA' OR g_4ATC4='C09DA' OR
g_4ATC5='C09DA' OR g_4ATC6='C09DA' OR
g_4ATC7='C09DA' OR g_4ATC8='C09DA' OR g_4ATC9='C09DA' OR g_4ATC10='C09DA' OR
g_4ATC11='C09DA' OR g_4ATC12='C09DA' OR g_4ATC13='C09DA' OR
g_4ATC14='C09DA' OR g_4ATC15='C09DA' OR g_4ATC16='C09DA') gmed_diu=1.
If (g_4ATC1='C08G' OR g_4ATC2='C08G' OR g_4ATC3='C08G' OR g_4ATC4='C08G' OR g_4ATC5='C08G' OR g_4ATC6='C08G' OR
g_4ATC7='C08G' OR g_4ATC8='C08G' OR g_4ATC9='C08G' OR g_4ATC10='C08G' OR g_4ATC11='C08G' OR g_4ATC12='C08G' OR g_4ATC13='C08G' OR
g_4ATC14='C08G' OR g_4ATC15='C08G' OR g_4ATC16='C08G') gmed_diu=1.
EXECUTE.

*C09AX C09CX C01AA.
If (g_5ATC1='C09AX' OR g_5ATC2='C09AX' OR g_5ATC3='C09AX' OR g_5ATC4='C09AX' OR g_5ATC5='C09AX' OR g_5ATC6='C09AX' OR
g_5ATC7='C09AX' OR g_5ATC8='C09AX' OR g_5ATC9='C09AX' OR g_5ATC10='C09AX' OR g_5ATC11='C09AX' OR g_5ATC12='C09AX' OR g_5ATC13='C09AX' OR
g_5ATC14='C09AX' OR g_5ATC15='C09AX' OR g_5ATC16='C09AX') gmed_diu=1.
If (g_5ATC1='C09CX' OR g_5ATC2='C09CX' OR g_5ATC3='C09CX' OR g_5ATC4='C09CX' OR g_5ATC5='C09CX' OR g_5ATC6='C09CX' OR
g_5ATC7='C09CX' OR g_5ATC8='C09CX' OR g_5ATC9='C09CX' OR g_5ATC10='C09CX' OR g_5ATC11='C09CX' OR g_5ATC12='C09CX' OR g_5ATC13='C09CX' OR
g_5ATC14='C09CX' OR g_5ATC15='C09CX' OR g_5ATC16='C09CX') gmed_diu=1.
If (g_5ATC1='C01AA' OR g_5ATC2='C01AA' OR g_5ATC3='C01AA' OR g_5ATC4='C01AA' OR g_5ATC5='C01AA' OR g_5ATC6='C01AA' OR
g_5ATC7='C01AA' OR g_5ATC8='C01AA' OR g_5ATC9='C01AA' OR g_5ATC10='C01AA' OR g_5ATC11='C01AA' OR g_5ATC12='C01AA' OR g_5ATC13='C01AA' OR
g_5ATC14='C01AA' OR g_5ATC15='C01AA' OR g_5ATC16='C01AA') gmed_diu=1.
EXECUTE.

*********************year of interview (2008 or 2009).
COMPUTE t7_year=XDATE.YEAR(t7_dat).
VARIABLE LABELS t7_year "LASA main interview year (w7)".

```
VARIABLE LEVEL t7_year(SCALE).
FORMATS t7_year(F8.0).
VARIABLE WIDTH t7_year(8).
EXECUTE.


*********************ARRHYTHMIA (ARI) at G*********************.
*Selfreport surgery implantation of pacemaker.
COMPUTE g_surARI=-3.
IF (ghart15d le -1) g_surARI=-1.
IF (ghart01 le -1) g_surARI=-1.
IF (ghart15 le -1) g_surARI=-1.
IF (ghart01=0 or ghart01=1) g_surARI=0.
IF (ghart15d=0) g_surARI=0.
IF (ghart15=1) g_surARI=0.
IF (ghart15d=1) g_surARI=1.
VARIABLE LABELS g_surARI 'self report surgery: pacemaker'.
VALUE LABELS g_surARI
        -1 'missing'
        0 'no'
        1 'yes'.


*use of anti arrythmic medication.
RECODE gmed_ARI (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO g_mARI.
IF (gmed_ino=1) g_mARI=1.
IF (gmvar13=1) g_mARI=0.
IF (gmvar13 le -1) g_mARI=-1.
VARIABLE LABELS  g_mARI 'use of antiarrhythmics'.
VALUE LABELS g_mARI
        -1 'missing'
        0 'no'
        1 'yes'.


*GP diagnosis of ARI.
COMPUTE g_gpARI=-3.
IF (fgarrth le -1) g_gpARI=-1.
IF (t7_year le -1) g_gpARI=-1.
IF (fgarrth=0) g_gpARI=0.
IF (fgarrth=1 and fgarrthy ge 7) g_gpARI=0.
IF (fgarrth=1 and fgarrthy ge 6 and t7_year=2008) g_gpARI=0.
IF (fgarrth=1 and (fgarrthy ge 1 and fgarrthy le 5)) g_gpARI=1.
IF (fgarrth=1 and (fgarrthy=6 and t7_YEAR=2009)) g_gpARI=1.
IF (fgarrth=1 and fgarrthy le -1) g_gpARI=2.
IF (fgarrth=1 and fgarrthy=1) g_gpARI=1.
IF (egarrth=1) g_gpARI=1.
IF (cgarrth=1) g_gpARI=1.
If (g_gpARI=-1 AND hgarrth=0) g_gpARI=0.
If (g_gpARI=-1 AND hgarrth=1 AND hgarrthy ge 2) g_gpARI=0.
If (g_gpARI=-1 AND hgarrth=1 AND hgarrthy le 1) g_gpARI=2.
VARIABLE LABELS g_gpARI 'gp diagnosis: cardiac arrhythmia'.
VALUE LABELS g_gpARI
        -1 'missing'
        0 'no'
```

1 'yes'
2 'diagnose = yes, but year = missing'.

*ARI algorithm: medication, GP diagnosis and SR implantation of pacemaker combined.
compute g_alg_ARI=-3.
IF (g_mARI=1) g_alg_ARI=1.
IF (g_mARI=0 and g_gpARI=1 and (gmed_stol_beta=1)) g_alg_ARI=1.
IF (g_mARI=0 and g_gpARI=1 and (gmed_stol_beta=0) and fgarrths=1) g_alg_ARI=1.
IF (g_mARI=0 and g_gpARI=1 and (gmed_stol_beta=0) and fgarrths le 0 and g_surARI=1) g_alg_ARI=1.
IF (g_mARI=0 and g_gpARI=1 and (gmed_stol_beta=0) and fgarrths le 0 and g_surARI le 0)
g_alg_ARI=2.
IF (g_mARI=0 and g_gpARI=0 and g_surARI=1) g_alg_ARI=3.
IF (g_mARI=0 and g_gpARI=0 and g_surARI le 0) g_alg_ARI=0.
IF (g_mARI=0 and g_gpARI=2 and (gmed_stol_beta=1)) g_alg_ARI=1.
IF (g_mARI=0 and g_gpARI=2 and (gmed_stol_beta=0) and g_surARI=1) g_alg_ARI=1.
IF (g_mARI=0 and g_gpARI=2 and (gmed_stol_beta=0) and g_surARI le 0) g_alg_ARI=0.
IF (g_mARI=0 and g_gpARI=2 and (gmed_stol_beta=0) and g_surARI le -1) g_alg_ARI=0.
IF (g_mARI=0 and g_gpARI=-1 and g_surARI=1) g_alg_ARI=2.
IF (g_mARI=0 and g_gpARI=-1 and (gmed_stol_beta=0) and g_surARI=0) g_alg_ARI=0.
IF (g_mARI=0 and g_gpARI=-1 and (gmed_stol_beta=0) and g_surARI le -1) g_alg_ARI=-1.
IF (g_mARI=0 and g_gpARI=-1 and (gmed_stol_beta=1) and g_surARI le 0) g_alg_ARI=-1.
IF (g_mARI le -1 and g_gpARI=1 and fgarrths=1) g_alg_ARI=1.
IF (g_mARI le -1 and g_gpARI=1 and fgarrths le 0 and g_surARI=1) g_alg_ARI=1.
IF (g_mARI le -1 and g_gpARI=1 and fgarrths le 0 and g_surARI le 0) g_alg_ARI=2.
IF (g_mARI le -1 and g_gpARI=0 and g_surARI=1) g_alg_ARI=3.
IF (g_mARI le -1 and g_gpARI=0 and g_surARI le 0) g_alg_ARI=0.
IF (g_mARI le -1 and g_gpARI=2 and g_surARI=1) g_alg_ARI=1.
IF (g_mARI le -1 and g_gpARI=2 and g_surARI le 0) g_alg_ARI=-1.
IF (g_mARI le -1 and g_gpARI le -1 and g_surARI=1) g_alg_ARI=2.
IF (g_mARI le -1 and g_gpARI le -1 and g_surARI le 0) g_alg_ARI=-1.
IF (g_alg_ARI=-1 and (gtrhart1=0 or gtphart1=0)) g_alg_ARI=0.
VARIABLE LABELS g_alg_ARI 'G wave: arrythmia'.
VALUE LABELS g_alg_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CEREBROVASCULAR ACCIDENT (CVA) at G*********************.
*Selfreport diagnosis of CVA.
COMPUTE g_srCVA=-3.
IF (gcva01=2 or gcva01=3) g_srCVA=1.
IF (gcva01=0 or gcva01=1) g_srCVA=0.
IF (gtpcva01=1) g_srCVA=1.
IF (gtpcva01=0) g_srCVA=0.
IF (gtrcva01=1) g_srCVA=1.
IF (gtrcva01=0) g_srCVA=0.
IF (gcva01 le -1 and gtpcva01 le -1 and gtrcva01 le -1) g_srCVA=-1.
VARIABLE LABELS g_srCVA 'self report: CVA'.
VALUE LABELS g_srCVA
        -1 'missing'

```
        0 'no'
        1 'yes'.

*GP diagnosis of CVA.
COMPUTE g_gpCVA=-3.
IF (fgcva le -1) g_gpCVA=-1.
IF (t7_year le -1) g_gpCVA=-1.
IF (fgcva=0) g_gpCVA=0.
IF (fgcva=1 and fgcvay ge 7) g_gpCVA=0.
IF (fgcva=1 and fgcvay ge 6 and t7_year=2008) g_gpCVA=0.
IF (fgcva=1 and (fgcvay ge 1 and fgcvay le 5)) g_gpCVA=1.
IF (fgcva=1 and (fgcvay=6 and t7_YEAR=2009)) g_gpCVA=1.
IF (fgcva=1 and fgcvay le -1) g_gpCVA=2.
IF (fgcva=1 and fgcvay=1) g_gpCVA=1.
IF (egcva=1) g_gpCVA=1.
IF (cgcva=1) g_gpCVA=1.
IF (bgcva=1) g_gpCVA=1.
If (g_gpCVA=-1 AND hgcva=0) g_gpCVA=0.
If (g_gpCVA=-1 AND hgcva=1 AND hgcvay ge 2) g_gpCVA=0.
If (g_gpCVA=-1 AND hgcva=1 AND hgcvay le 1) g_gpCVA=2.
VARIABLE LABELS g_gpCVA 'gp diagnosis: CVA'.
VALUE LABELS g_gpCVA
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CVA algorithm: GP diagnosis and SR combined.
COMPUTE g_alg_CVA=-3.
IF (g_gpCVA=1 and fgcvas=1) g_alg_CVA=1.
IF (g_gpCVA=1 and fgcvas le 0 and g_srCVA=1) g_alg_CVA=1.
IF (g_gpCVA=1 and fgcvas le 0 and g_srCVA=0) g_alg_CVA=3.
IF (g_gpCVA=1 and fgcvas le 0 and g_srCVA le -1) g_alg_CVA=2.
IF (g_gpCVA=0 and g_srCVA=1) g_alg_CVA=3.
IF (g_gpCVA=0 and g_srCVA=0) g_alg_CVA=0.
IF (g_gpCVA=0 and g_srCVA le -1) g_alg_CVA=0.
IF (g_gpCVA=2 and g_srCVA=1) g_alg_CVA=1.
IF (g_gpCVA=2 and g_srCVA=0) g_alg_CVA=0.
IF (g_gpCVA=2 and g_srCVA le -1) g_alg_CVA=-1.
IF (g_gpCVA le -1 and g_srCVA=1) g_alg_CVA=2.
IF (g_gpCVA le -1 and g_srCVA=0) g_alg_CVA=0.
IF (g_gpCVA le -1 and g_srCVA le -1) g_alg_CVA=-1.
VARIABLE LABELS g_alg_CVA 'G wave: cerebrovascular accident'.
VALUE LABELS g_alg_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.
```

*********************MYOCARDIAL INFARCTION (MI) at G********************.
*Selfreport diagnosis of MI.
COMPUTE g_srMI=-5.
IF (ghart01 le -1) g_srMI=-1.
IF ((ghart01=2 or ghart01=3) and ghart05 le -1) g_srMI=-1.
IF (ghart05=1) g_srMI=0.
IF (ghart01=0 or ghart01=1) g_srMI=0.
IF (ghart05=2) g_srMI=1.
IF (gtphart1=0 or gtrhart1=0) g_srMI=0.
VARIABLE LABELS g_srMI 'self report: myocardial infarction'.
VALUE LABELS g_srMI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of MI.
COMPUTE g_gpmi=-3.
IF (fgmi le -1) g_gpMI=-1.
IF (t7_year le -1) g_gpMI=-1.
IF (fgmi=0) g_gpMI=0.
IF (fgmi=1 and fgmiy ge 7) g_gpMI=0.
IF (fgmi=1 and fgmiy ge 6 and t7_year=2008) g_gpMI=0.
IF (fgmi=1 and (fgmiy ge 1 and fgmiy le 5)) g_gpMI=1.
IF (fgmi=1 and (fgmiy=6 and t7_YEAR=2009)) g_gpMI=1.
IF (fgmi=1 and fgmiy le -1) g_gpMI=2.
IF (fgmi=1 and fgmiy=1) g_gpMI=1.
IF (egmi=1) g_gpMI=1.
IF (cgmi=1) g_gpMI=1.
If (g_gpmi=-1 AND hgmi=0) g_gpmi=0.
If (g_gpmi=-1 AND hgmi=1 AND hgmiy ge 2) g_gpmi=0.
If (g_gpmi=-1 AND hgmi=1 AND hgmiy le 1) g_gpmi=2.
VARIABLE LABELS g_gpMI 'gp diagnosis: MI'.
VALUE LABELS g_gpMI
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*MI algorithm: GP diagnosis and SR combined.
COMPUTE g_alg_MI=-3.
IF (g_gpMI=1 and fgmis=1) g_alg_MI=1.
IF (g_gpMI=1 and fgmis le 0 and g_srMI=1) g_alg_MI=1.
IF (g_gpMI=1 and fgmis le 0 and g_srMI=0) g_alg_MI=3.
IF (g_gpMI=1 and fgmis le 0 and g_srMI le -1) g_alg_MI=2.
IF (g_gpMI=0 and g_srMI=1) g_alg_MI=3.
IF (g_gpMI=0 and g_srMI=0) g_alg_MI=0.
IF (g_gpMI=0 and g_srMI le -1) g_alg_MI=0.
IF (g_gpMI=2 and g_srMI=1) g_alg_MI=1.
IF (g_gpMI=2 and g_srMI=0) g_alg_MI=0.
IF (g_gpMI=2 and g_srMI le -1) g_alg_MI=-1.
IF (g_gpMI le -1 and g_srMI=1) g_alg_MI=2.

IF (g_gpMI le -1 and g_srMI=0) g_alg_MI=0.
IF (g_gpMI le -1 and g_srMI le -1) g_alg_MI=-1.
VARIABLE LABELS g_alg_MI 'G wave: myocardial infarction'.
VALUE LABELS g_alg_MI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************ANGINA PECTORIS (AP) at G*********************.
*Selfreport diagnosis of AP.
COMPUTE g_srAP=-5.
IF (ghart01 le -1) g_srAP=-1.
IF ((ghart01=2 or ghart01=3) and ghart10 le -1) g_srAP=-1.
IF (ghart01=0 or ghart01=1) g_srAP=0.
IF (ghart11=1 or gdiabe12=1) g_srAP=0.
if (((ghart01=2 or ghart01=3) and ghart10=1) OR ((gdiabe01=2 or gdiabe01=3) and gdiabe11=1))
g_srAP=0.
IF (((ghart01=2 or ghart01=3) and ghart10 ge 4) OR ((gdiabe01=2 or gdiabe01=3) and gdiabe11 ge 4))
g_srAP=0.
IF (((ghart01=2 or ghart01=3) and ghart10=2 and ghart11 le -1) OR ((gdiabe01=2 or gdiabe01=3) and
gdiabe11=2 and gdiabe12 le -1)) g_srAP=2.
IF (ghart11=2 or gdiabe12=2) g_srAP=1.
IF (ghart10=3 or gdiabe11=3) g_srAP=1.
IF (gtphart1=0 or gtrhart1=0) g_srAP=0.
VARIABLE LABELS g_srAP 'self report: angina pectoris'.
VALUE LABELS g_srAP
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of AP.
COMPUTE g_gpAP=-3.
IF (fgap le -1) g_gpAP=-1.
IF (t7_year le -1) g_gpAP=-1.
IF (fgap=0) g_gpAP=0.
IF (fgap=1 and fgapy ge 7) g_gpAP=0.
IF (fgap=1 and fgapy ge 6 and t7_year=2008) g_gpAP=0.
IF (fgap=1 and (fgapy ge 1 and fgapy le 5)) g_gpAP=1.
IF (fgap=1 and (fgapy=6 and t7_YEAR=2009)) g_gpAP=1.
IF (fgap=1 and fgapy le -1) g_gpAP=2.
IF (fgap=1 and fgapy=1) g_gpAP=1.
IF (egap=1) g_gpAP=1.
IF (cgap=1) g_gpAP=1.
If (g_gpap=-1 AND hgap=0) g_gpap=0.
If (g_gpap=-1 AND hgap=1 AND hgapy ge 2) g_gpap=0.
If (g_gpap=-1 AND hgap=1 AND hgapy le 1) g_gpap=2.
VARIABLE LABELS g_gpAP 'gp diagnosis: angina pectoris'.
VALUE LABELS g_gpAP

-2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*use of AP medication: nitrates.
RECODE gmed_ang (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO g_mAP.
IF (gmvar13 le -1) g_mAP=-1.
IF (gmvar13=1) g_mAP=0.
VARIABLE LABELS g_mAP 'use of nitrates'.
VALUE LABELS g_mAP
        -1 'missing'
        0 'no'
        1 'yes'.

*AP algorithm: medication, GP diagnosis and SR combined.
COMPUTE g_alg_AP=-3.
IF (g_mAP=1) g_alg_AP=1.
IF (g_mAP le 0 and g_srAP=1 and g_gpAP=1) g_alg_AP=1.
IF (g_mAP le 0 and g_srAP=1 and g_gpAP=0) g_alg_AP=3.
IF (g_mAP le 0 and g_srAP=1 and g_gpap=2) g_alg_AP=1.
IF (g_mAP le 0 and g_srAP=1 and g_gpAP le -1) g_alg_AP=2.
IF (g_mAP le 0 and g_srAP=0 and g_gpAP=1 and fgaps=1) g_alg_AP=1.
IF (g_mAP le 0 and g_srAP=0 and g_gpAP=1 and fgaps le 0) g_alg_AP=3.
IF (g_mAP le 0 and g_srAP=0 and g_gpAP=0) g_alg_AP=0.
IF (g_mAP le 0 and g_srAP=0 and g_gpap=2) g_alg_AP=0.
IF (g_mAP le 0 and g_srAP=0 and g_gpAP le -1) g_alg_AP=0.
IF (g_mAP le 0 and g_srAP=2 and g_gpAP=1) g_alg_AP=1.
IF (g_mAP le 0 and g_srAP=2 and g_gpAP=0) g_alg_AP=0.
IF (g_mAP le 0 and g_srAP=2 and g_gpAP=2) g_alg_AP=-1.
IF (g_mAP le 0 and g_srAP=2 and g_gpap=-1) g_alg_AP=-1.
IF (g_mAP le 0 and g_srAP le -1 and g_gpAP=1 and fgaps=1) g_alg_AP=1.
IF (g_mAP le 0 and g_srAP le -1 and g_gpAP=1 and fgaps le 0) g_alg_AP=2.
IF (g_mAP le 0 and g_srAP le -1 and g_gpAP=0) g_alg_AP=0.
IF (g_mAP le 0 and g_srAP le -1 and g_gpap=2) g_alg_AP=-1.
IF (g_mAP le 0 and g_srAP le -1 and g_gpAP le -1) g_alg_AP=-1.
VARIABLE LABELS g_alg_AP 'G wave: angina pectoris'.
VALUE LABELS g_alg_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CONGESTIVE HEART FAILURE (CHF) at G*********************.
*Selfreport diagnosis of CHF.
COMPUTE g_srCHF=-3.
IF (ghart01 le -1) g_srCHF=-1.
IF ((ghart01=2 or ghart01=3) and ghart12 le -1) g_srCHF=-1.
IF (ghart01=0 or ghart01=1) g_srCHF=0.
IF ((ghart01=2 or ghart01=3) and ghart12=1) g_srCHF=0.

IF ((ghart01=2 or ghart01=3) and ghart12=2) g_srCHF=1.
IF (gtphart1=0 or gtrhart1=0) g_srCHF=0.
VARIABLE LABELS g_srCHF 'self reported diagnosis of congestive heart failure'.
VALUE LABELS g_srCHF
       -1 'missing'
       0 'no'
       1 'yes'.

*GP diagnosis of CHF.
COMPUTE g_gpCHF=-3.
IF (fgchf le -1) g_gpCHF=-1.
IF (t7_year le -1) g_gpCHF=-1.
IF (fgchf=0) g_gpCHF=0.
IF (fgchf=1 and fgchfy ge 7) g_gpCHF=0.
IF (fgchf=1 and fgchfy ge 6 and t7_year=2008) g_gpCHF=0.
IF (fgchf=1 and (fgchfy ge 1 and fgchfy le 5)) g_gpCHF=1.
IF (fgchf=1 and (fgchfy=6 and t7_YEAR=2009)) g_gpCHF=1.
IF (fgchf=1 and fgchfy le -1) g_gpCHF=2.
IF (fgchf=1 and fgchfy=1) g_gpCHF=1.
IF (egchf=1) g_gpCHF=1.
IF (cgchf=1) g_gpCHF=1.
If (g_gpchf=-1 AND hgchf=0) g_gpchf=0.
If (g_gpchf=-1 AND hgchf=1 AND hgchfy ge 2) g_gpchf=0.
If (g_gpchf=-1 AND hgchf=1 AND hgchfy le 1) g_gpchf=2.
VARIABLE LABELS g_gpCHF 'gp diagnosis: congestive heart failure'.
VALUE LABELS g_gpCHF
       -2 'dropout'
       -1 'missing'
       0 'no'
       1 'yes'
       2 'diagnose = yes, but year = missing'.

*CHF medication: diuretics, antihypertensives, nitrates, inotropics, beta blocking agents.
compute g_mCHF=0.
if (gmed_diu=1 and (gmed_hyp=1 or gmed_ang=1 or gmed_ino=1 or gmed_beta=1)) g_mCHF=1.
IF (gmvar13 le -1) g_mCHF=-1.
IF (gmvar13=1) g_mCHF=0.
VARIABLE LABELS g_mCHF 'medication for congestive heart failure'.
VALUE LABELS g_mCHF
       -1 'missing'
       0 'no'
       1 'yes'.

*CHF algorithm: medication, GP diagnosis and SR combined.
COMPUTE g_alg_CHF=-3.
IF (g_gpCHF=1 and fgchfs=1) g_alg_CHF=1.
IF (g_gpCHF=1 and fgchfs le 0 and g_srCHF=1) g_alg_CHF=1.
IF (g_gpCHF=1 and fgchfs le 0 and g_srCHF le 0 and g_mCHF=1) g_alg_CHF=1.
IF (g_gpCHF=1 and fgchfs le 0 and g_srCHF=0 and g_mCHF=0) g_alg_CHF=2.
IF (g_gpCHF=1 and fgchfs le 0 and g_srCHF le 0 and g_mCHF le -1) g_alg_CHF=2.
IF (g_gpCHF=1 and fgchfs le 0 and g_srCHF le -1 and g_mCHF le 0) g_alg_CHF=2.
IF (g_gpCHF=0 and g_srCHF=1 and g_mCHF=1) g_alg_CHF=1.

IF (g_gpCHF=0 and g_srCHF=1 and g_mCHF le 0) g_alg_CHF=2.
IF (g_gpCHF=0 and g_srCHF le 0 and g_mCHF=1) g_alg_CHF=3.
IF (g_gpCHF=0 and g_srCHF le 0 and g_mCHF le 0) g_alg_CHF=0.
IF (g_gpCHF=2 and g_srCHF=1) g_alg_CHF=1.
IF (g_gpCHF=2 and g_srCHF le 0 and g_mCHF=1) g_alg_CHF=1.
IF (g_gpCHF=2 and g_srCHF le 0 and g_mCHF le 0) g_alg_CHF=0.
IF (g_gpCHF=2 and g_srCHF=0 and g_mCHF=-1) g_alg_CHF=-1.
IF (g_gpCHF=2 and g_srCHF le -1 and g_mCHF le -1) g_alg_CHF=-1.
IF (g_gpCHF le -1 and g_srCHF=1 and g_mCHF=1) g_alg_CHF=1.
IF (g_gpCHF le -1 and g_srCHF=1 and g_mCHF le 0) g_alg_CHF=2.
IF (g_gpCHF le -1 and g_srCHF=0 and g_mCHF=1) g_alg_CHF=2.
IF (g_gpCHF le -1 and g_srCHF=0 and g_mCHF le 0) g_alg_CHF=0.
IF (g_gpCHF le -1 and g_srCHF le -1 and g_mCHF=1) g_alg_CHF=2.
IF (g_gpCHF le -1 and g_srCHF le -1 and g_mCHF=0) g_alg_CHF=0.
IF (g_gpCHF le -1 and g_srCHF le -1 and g_mCHF le -1) g_alg_CHF=-1.
VARIABLE LABELS g_alg_CHF 'G wave: congestive heart failure'.
VALUE LABELS g_alg_CHF
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

**********************PERIPHERAL ARTERIAL DISEASE (PAD) at G********************.
*Selfreport diagnosis of PAD.
COMPUTE g_srPAD=-5.
IF (gartvei1 le -1) g_srPAD=-1.
IF ((gartvei1=2 or gartvei1=3) and gartvei5 le -1) g_srPAD=-1.
IF (gartvei1=0 or gartvei1=1) g_srPAD=0.
IF (gartvei7=1 or gdiabe09=1) g_srPAD=0.
IF (gartvei5=1 or gdiabe07=1) g_srPAD=0.
IF ((gartvei5=2 and gartvei7 le -1) or (gdiabe07=2 and gdiabe09 le -1)) g_srPAD=2.
IF (gartvei7=2 or gdiabe09=2) g_srPAD=1.
IF (gtpartv1=0 OR gtrartv1=0) g_srPAD=0.
IF (gtpartv1=1 OR gtrartv1=1) g_srPAD=2.
IF (gartvei1 le -1 and gtpartv1 le -1 and gtrartv1 le -1) g_srPAD=-1.
VARIABLE LABELS g_srPAD 'self reported diagnosis of peripheral artery disease'.
VALUE LABELS g_srPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*Selfreport surgery.
COMPUTE g_surPAD=-3.
IF (gartvei1 le -1) g_surPAD=-1.
IF ((gartvei1=2 or gartvei1=3) and gartve8 le -1) g_surPAD=-1.
IF (gartve8=1) g_surPAD=0.
IF ((gartve8c=0 AND gartve8d=0) AND (gartve8b le 0)) g_surPAD=0.
IF (gartvei1=0 or gartvei1=1) g_surPAD=0.
IF ((gartve8c le 0 AND gartve8d le 0) AND (gartve8b=1)) g_surPAD=2.
IF (gartve8c=1 OR gartve8d=1) g_surPAD=1.

VARIABLE LABELS g_surPAD 'self reported surgery of peripheral arteries'.
VALUE LABELS g_surPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of PAD.
COMPUTE g_gpPAD=-3.
IF (fgartvei le -1) g_gpPAD=-1.
IF (t7_year le -1) g_gpPAD=-1.
IF (fgartvei=0) g_gpPAD=0.
IF (fgartvei=1 and fgartvey ge 7) g_gpPAD=0.
IF (fgartvei=1 and fgartvey ge 6 and t7_year=2008) g_gpPAD=0.
IF (fgartvei=1 and (fgartvey ge 1 and fgartvey le 5)) g_gpPAD=1.
IF (fgartvei=1 and (fgartvey=6 and t7_YEAR=2009)) g_gpPAD=1.
IF (fgartvei=1 and fgartvey le -1) g_gpPAD=2.
IF (fgartvei=1 and fgartvey=1) g_gpPAD=1.
IF (egartvei=1) g_gpPAD=1.
IF (cgartvei=1) g_gpPAD=1.
IF (bgclan=1) g_gpPAD=1.
If (g_gpPAD=-1 AND hgartvei=0) g_gpPAD=0.
If (g_gpPAD=-1 AND hgartvei=1 AND hgartvey ge 2) g_gpPAD=0.
If (g_gpPAD=-1 AND hgartvei=1 AND hgartvey le 1) g_gpPAD=2.
VARIABLE LABELS g_gpPAD 'gp diagnosis: PAD'.
VALUE LABELS g_gpPAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*PAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE g_alg_PAD=-3.
IF (g_surPAD=1) g_alg_PAD=1.
IF (g_surPAD le 0 and g_gpPAD=1 and fgartves=1) g_alg_PAD=1.
IF (g_surPAD le 0 and g_gpPAD=1 and fgartves le 0 and g_srPAD=1) g_alg_PAD=1.
IF (g_surPAD le 0 and g_gpPAD=1 and fgartves le 0 and g_srPAD=0) g_alg_PAD=3.
IF (g_surPAD le 0 and g_gpPAD=1 and fgartves le 0 and g_srPAD le -1) g_alg_PAD=2.
IF (g_surPAD le 0 and g_gpPAD=1 and fgartves le 0 and g_srPAD=2) g_alg_PAD=1.
IF (g_surPAD le 0 and g_gpPAD=0 and g_srPAD=1) g_alg_PAD=3.
IF (g_surPAD le 0 and g_gpPAD=0 and g_srPAD=0) g_alg_PAD=0.
IF (g_surPAD le 0 and g_gpPAD=0 and g_srPAD le -1) g_alg_PAD=0.
IF (g_surPAD le 0 and g_gpPAD=0 and g_srPAD=2) g_alg_PAD=0.
IF (g_surPAD le 0 and g_gpPAD=2 and g_srPAD=1) g_alg_PAD=1.
IF (g_surPAD le 0 and g_gpPAD=2 and g_srPAD=0) g_alg_PAD=0.
IF (g_surPAD le 0 and g_gpPAD=2 and g_srPAD le -1) g_alg_PAD=-1.
IF (g_surPAD le 0 and g_gpPAD=2 and g_srPAD=2) g_alg_PAD=1.
IF (g_surPAD le 0 and g_gpPAD le -1 and g_srPAD=1) g_alg_PAD=2.
IF (g_surPAD le 0 and g_gpPAD le -1 and g_srPAD=0) g_alg_PAD=0.
IF (g_surPAD le 0 and g_gpPAD le -1 and g_srPAD le -1) g_alg_PAD=-1.
IF (g_surPAD le 0 and g_gpPAD le -1 and g_srPAD=2) g_alg_PAD=-1.

IF (g_surPAD=2 and g_gpPAD=1) g_alg_PAD=1.
IF (g_surPAD=2 and g_gpPAD=0 and g_srPAD=1) g_alg_PAD=1.
IF (g_surPAD=2 and g_gpPAD=0 and g_srPAD=0) g_alg_PAD=0.
IF (g_surPAD=2 and g_gpPAD=0 and g_srPAD le -1) g_alg_PAD=0.
IF (g_surPAD=2 and g_gpPAD=0 and g_srPAD=2) g_alg_PAD=3.
IF (g_surPAD=2 and g_gpPAD=2 and g_srPAD=1) g_alg_PAD=1.
IF (g_surPAD=2 and g_gpPAD le -1 and g_srPAD=1) g_alg_PAD=1.
IF (g_surPAD=2 and g_gpPAD le -1 and g_srPAD=0) g_alg_PAD=0.
IF (g_surPAD=2 and g_gpPAD le -1 and g_srPAD le -1) g_alg_PAD=-1.
IF (g_surPAD=2 and g_gpPAD le -1 and g_srPAD=2) g_alg_PAD=-1.
VARIABLE LABELS g_alg_PAD 'G wave algorithm: peripheral artery disease'.
VALUE LABELS g_alg_PAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CORONARY ARTERY DISEASE (CAD) at G*********************.
*CAD Selfreport surgery.
COMPUTE g_surCAD=-3.
IF ((ghart01=2 or ghart01=3) and ghart15 le -1) g_surCAD=-1.
IF (ghart01 le -1) g_surCAD=-1.
IF (ghart15b le -1 AND ghart15c le -1) g_surCAD=-1.
IF (ghart15b=0 AND ghart15c=0) g_surCAD=0.
IF (ghart15=1) g_surCAD=0.
IF (ghart01=0 or ghart01=1) g_surCAD=0.
IF (ghart15b=1 OR ghart15c=1) g_surCAD=1.
VARIABLE LABELS g_surCAD 'self reported surgery of coronary arteries'.
VALUE LABELS g_surCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*CAD selfreport (=Selfreport of AP or MI).
COMPUTE g_srCAD=-5.
IF (ghart01 le -1) g_srCAD=-1.
IF (g_srMI=0 AND g_srAP=2) g_srCAD=-1.
IF (g_srMI=0 AND g_srAP le -1) g_srCAD=-1.
IF (g_srMI le -1 AND g_srAP=0) g_srCAD=-1.
IF (g_srMI le -1 AND g_srAP=2) g_srCAD=-1.
IF (g_srMI le -1 AND g_srAP le -1) g_srCAD=-1.
IF (g_srMI=0 AND g_srAP=0) g_srCAD=0.
IF (ghart01=0 or ghart01=1) g_srCAD=0.
IF (g_srMI le -1 AND g_srAP=1) g_srCAD=1.
IF (g_srMI=1) g_srCAD=1.
IF (g_srAP=1) g_srCAD=1.
IF (gtphart1=0 or gtrhart1=0) g_srCAD=0.
VARIABLE LABELS g_srCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS g_srCAD
        -1 'missing'
        0 'no'

1 'yes'.

*GP diagnosis of CAD (gp diagnosis of AP or MI).
COMPUTE g_gpCAD=-5.
IF (g_gpMI le -1 AND g_gpAP=0) g_gpCAD=-1.
IF (g_gpMI=0 AND g_gpAP le -1) g_gpCAD=-1.
IF (g_gpMI le -1 AND g_gpAP le -1) g_gpCAD=-1.
IF (g_gpMI=0 AND g_gpAP=0) g_gpCAD=0.
IF (g_gpMI=0 AND g_gpAP=2) g_gpCAD=2.
IF (g_gpMI le -1 AND g_gpAP=2) g_gpCAD=2.
IF (g_gpMI=2 AND g_gpAP=0) g_gpCAD=2.
IF (g_gpMI=2 AND g_gpAP=2) g_gpCAD=2.
IF (g_gpMI=2 AND g_gpAP le -1) g_gpCAD=2.
IF (g_gpMI=1) g_gpCAD=1.
IF (g_gpAP=1) g_gpCAD=1.
IF (t7_year le -1) g_gpCAD=-2.
VARIABLE LABELS g_gpCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS g_gpCAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE g_alg_CAD=-3.
IF (g_mAP le 0 and g_surCAD le 0 and g_srMI le 0 and (g_srAP le 0 or g_srAP=2) and g_gpMI le 0) g_alg_CAD=0.
IF (g_mAP le -1 and g_surCAD le -1 and g_srMI le -1 and g_srAP le -1 and g_gpAP le -1 and g_gpMI le -1) g_alg_CAD=-1.
IF (g_mAP=0 and g_surCAD=0 and g_srMI=0 and g_srAP=0 and g_gpAP=0 and g_gpMI=0) g_alg_CAD=0.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_srAP=1 and (g_srMI le 0 and g_gpAP le 0 and g_gpMI le 0))) g_alg_CAD=3.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_srMI=1 and (g_srAP le 0 and g_gpAP le 0 and g_gpMI le 0))) g_alg_CAD=3.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpAP=1 and fgaps le 0 and (g_gpMI le 0 or g_gpMI=2) and g_srAP le 0 and g_srMI le 0)) g_alg_CAD=3.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpMI=1 and fgmis le 0 and (g_gpAP le 0 or g_gpAP=2) and g_srAP le 0 and g_srMI le 0)) g_alg_CAD=3.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_srAP=1 and (g_srMI le -1 and g_gpAP le -1 and g_gpMI le -1))) g_alg_CAD=2.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_srMI=1 and (g_srAP le -1 and g_gpAP le -1 and g_gpMI le -1))) g_alg_CAD=2.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpAP=1 and fgaps le 0 and g_gpMI le -1 and g_srAP le -1 and g_srMI le -1)) g_alg_CAD=2.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpMI=1 and fgmis le 0 and g_gpAP le -1 and g_srAP le -1 and g_srMI le -1)) g_alg_CAD=2.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpAP=2 and (g_gpMI le 0 or g_gpMI=2) and (g_srAP le 0 or g_srAP=2) and g_srMI le 0)) g_alg_CAD=0.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpMI=2 and (g_gpAP le 0 or g_gpAP=2) and (g_srAP le 0 or g_srAP=2) and g_srMI le 0)) g_alg_CAD=0.

IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpAP=2 and (g_gpMI le -1 or g_gpMI=2) and (g_srAP le -1 or g_srAP=2) and g_srMI le -1)) g_alg_CAD=-1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpMI=2 and (g_gpAP le -1 or g_gpAP=2) and (g_srAP le -1 or g_srAP=2) and g_srMI le -1)) g_alg_CAD=-1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_srAP=1 and (g_srMI=1 OR g_gpAP=1 OR g_gpMI=1))) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_srMI=1 and (g_srAP=1 OR g_gpAP=1 OR g_gpMI=1))) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpAP=1 and fgaps=1)) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpMI=1 and fgmis=1)) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpAP=1 and fgaps le 0) and (g_srMI=1 or g_srAP=1 or g_gpMI=1)) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpMI=1 and fgmis le 0) and (g_srMI=1 or g_srAP=1 or g_gpAP=1)) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_srAP=1 and g_srMI le 0) and (g_gpAP=2 or g_gpMI=2)) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_srMI=1) and (g_gpAP=2 or g_srAP=2 or g_gpMI=2)) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpAP=1 and g_srMI le 0) and (g_srAP=2 and g_gpMI=2)) g_alg_CAD=1.
IF ((g_mAP le 0 and g_surCAD le 0) and (g_gpMI=1 and g_srMI le 0) and (g_gpAP=2 or g_srAP=2)) g_alg_CAD=1.
IF (g_mAP=1 or g_surCAD=1) g_alg_CAD=1.
VARIABLE LABELS g_alg_CAD 'G wave: coronary artery disease'.
VALUE LABELS g_alg_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

********************H wave****************.
*create a string variable that consists of the first 3 characters of the ATC code.
string h_3ATC1(a30).
COMPUTE h_3ATC1 = CHAR.SUBSTR(hmatc1,1,3) .
string h_3ATC2(a30).
COMPUTE h_3ATC2 = CHAR.SUBSTR(hmatc2,1,3) .
string h_3ATC3(a30).
COMPUTE h_3ATC3 = CHAR.SUBSTR(hmatc3,1,3) .
string h_3ATC4(a30).
COMPUTE h_3ATC4 = CHAR.SUBSTR(hmatc4,1,3) .
string h_3ATC5(a30).
COMPUTE h_3ATC5 = CHAR.SUBSTR(hmatc5,1,3) .
string h_3ATC6(a30).
COMPUTE h_3ATC6 = CHAR.SUBSTR(hmatc6,1,3) .
string h_3ATC7(a30).
COMPUTE h_3ATC7 = CHAR.SUBSTR(hmatc7,1,3) .
string h_3ATC8(a30).
COMPUTE h_3ATC8 = CHAR.SUBSTR(hmatc8,1,3) .
string h_3ATC9(a30).
COMPUTE h_3ATC9 = CHAR.SUBSTR(hmatc9,1,3) .

```
string h_3ATC10(a30).
COMPUTE h_3ATC10 = CHAR.SUBSTR(hmatc10,1,3) .
string h_3ATC11(a30).
COMPUTE h_3ATC11 = CHAR.SUBSTR(hmatc11,1,3) .
string h_3ATC12(a30).
COMPUTE h_3ATC12 = CHAR.SUBSTR(hmatc12,1,3) .
string h_3ATC13(a30).
COMPUTE h_3ATC13 = CHAR.SUBSTR(hmatc13,1,3) .
string h_3ATC14(a30).
COMPUTE h_3ATC14 = CHAR.SUBSTR(hmatc14,1,3) .
string h_3ATC15(a30).
COMPUTE h_3ATC15 = CHAR.SUBSTR(hmatc15,1,3) .
string h_3ATC16(a30).
COMPUTE h_3ATC16 = CHAR.SUBSTR(hmatc16,1,3) .
string h_3ATC17(a30).
COMPUTE h_3ATC17 = CHAR.SUBSTR(hmatc17,1,3) .
string h_3ATC18(a30).
COMPUTE h_3ATC18 = CHAR.SUBSTR(hmatc18,1,3) .
string h_3ATC19(a30).
COMPUTE h_3ATC19 = CHAR.SUBSTR(hmatc19,1,3) .
string h_3ATC20(a30).
COMPUTE h_3ATC20 = CHAR.SUBSTR(hmatc20,1,3) .


*create a string variable that consists of the first 4 characters of the ATC code.
string h_4ATC1(a30).
COMPUTE h_4ATC1 = CHAR.SUBSTR(hmatc1,1,4) .
string h_4ATC2(a30).
COMPUTE h_4ATC2 = CHAR.SUBSTR(hmatc2,1,4) .
string h_4ATC3(a30).
COMPUTE h_4ATC3 = CHAR.SUBSTR(hmatc3,1,4) .
string h_4ATC4(a30).
COMPUTE h_4ATC4 = CHAR.SUBSTR(hmatc4,1,4) .
string h_4ATC5(a30).
COMPUTE h_4ATC5 = CHAR.SUBSTR(hmatc5,1,4) .
string h_4ATC6(a30).
COMPUTE h_4ATC6 = CHAR.SUBSTR(hmatc6,1,4) .
string h_4ATC7(a30).
COMPUTE h_4ATC7 = CHAR.SUBSTR(hmatc7,1,4) .
string h_4ATC8(a30).
COMPUTE h_4ATC8 = CHAR.SUBSTR(hmatc8,1,4) .
string h_4ATC9(a30).
COMPUTE h_4ATC9 = CHAR.SUBSTR(hmatc9,1,4) .
string h_4ATC10(a30).
COMPUTE h_4ATC10 = CHAR.SUBSTR(hmatc10,1,4) .
string h_4ATC11(a30).
COMPUTE h_4ATC11 = CHAR.SUBSTR(hmatc11,1,4) .
string h_4ATC12(a30).
COMPUTE h_4ATC12 = CHAR.SUBSTR(hmatc12,1,4) .
string h_4ATC13(a30).
COMPUTE h_4ATC13 = CHAR.SUBSTR(hmatc13,1,4) .
string h_4ATC14(a30).
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```
COMPUTE h_4ATC14 = CHAR.SUBSTR(hmatc14,1,4) .
string h_4ATC15(a30).
COMPUTE h_4ATC15 = CHAR.SUBSTR(hmatc15,1,4) .
string h_4ATC16(a30).
COMPUTE h_4ATC16 = CHAR.SUBSTR(hmatc16,1,4) .
string h_4ATC17(a30).
COMPUTE h_4ATC17 = CHAR.SUBSTR(hmatc17,1,4) .
string h_4ATC18(a30).
COMPUTE h_4ATC18 = CHAR.SUBSTR(hmatc18,1,4) .
string h_4ATC19(a30).
COMPUTE h_4ATC19 = CHAR.SUBSTR(hmatc19,1,4) .
string h_4ATC20(a30).
COMPUTE h_4ATC20 = CHAR.SUBSTR(hmatc20,1,4) .

*create a string variable that consists of the first 5 characters of the ATC code.
string h_5ATC1(a30).
COMPUTE h_5ATC1 = CHAR.SUBSTR(hmatc1,1,5) .
string h_5ATC2(a30).
COMPUTE h_5ATC2 = CHAR.SUBSTR(hmatc2,1,5) .
string h_5ATC3(a30).
COMPUTE h_5ATC3 = CHAR.SUBSTR(hmatc3,1,5) .
string h_5ATC4(a30).
COMPUTE h_5ATC4 = CHAR.SUBSTR(hmatc4,1,5) .
string h_5ATC5(a30).
COMPUTE h_5ATC5 = CHAR.SUBSTR(hmatc5,1,5) .
string h_5ATC6(a30).
COMPUTE h_5ATC6 = CHAR.SUBSTR(hmatc6,1,5) .
string h_5ATC7(a30).
COMPUTE h_5ATC7 = CHAR.SUBSTR(hmatc7,1,5) .
string h_5ATC8(a30).
COMPUTE h_5ATC8 = CHAR.SUBSTR(hmatc8,1,5) .
string h_5ATC9(a30).
COMPUTE h_5ATC9 = CHAR.SUBSTR(hmatc9,1,5) .
string h_5ATC10(a30).
COMPUTE h_5ATC10 = CHAR.SUBSTR(hmatc10,1,5) .
string h_5ATC11(a30).
COMPUTE h_5ATC11 = CHAR.SUBSTR(hmatc11,1,5) .
string h_5ATC12(a30).
COMPUTE h_5ATC12 = CHAR.SUBSTR(hmatc12,1,5) .
string h_5ATC13(a30).
COMPUTE h_5ATC13 = CHAR.SUBSTR(hmatc13,1,5) .
string h_5ATC14(a30).
COMPUTE h_5ATC14 = CHAR.SUBSTR(hmatc14,1,5) .
string h_5ATC15(a30).
COMPUTE h_5ATC15 = CHAR.SUBSTR(hmatc15,1,5) .
string h_5ATC16(a30).
COMPUTE h_5ATC16 = CHAR.SUBSTR(hmatc16,1,5) .
string h_5ATC17(a30).
COMPUTE h_5ATC17 = CHAR.SUBSTR(hmatc17,1,5) .
string h_5ATC18(a30).
COMPUTE h_5ATC18 = CHAR.SUBSTR(hmatc18,1,5) .
string h_5ATC19(a30).
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```
COMPUTE h_5ATC19 = CHAR.SUBSTR(hmatc19,1,5) .
string h_5ATC20(a30).
COMPUTE h_5ATC20 = CHAR.SUBSTR(hmatc20,1,5) .
EXECUTE.

*create a variable: use of beta blocking agents (atc code C07, thus includes combination preparaten)
yes/no.
compute hmed_beta=0.
If (hmvar13 le -1) hmed_beta=-1.
If (h_3ATC1='C07' OR h_3ATC2='C07' OR h_3ATC3='C07' OR h_3ATC4='C07' OR h_3ATC5='C07' OR
h_3ATC6='C07' OR
h_3ATC7='C07' OR h_3ATC8='C07' OR h_3ATC9='C07' OR h_3ATC10='C07' OR h_3ATC11='C07' OR
h_3ATC12='C07' OR h_3ATC13='C07' OR
h_3ATC14='C07' OR h_3ATC15='C07' OR h_3ATC16='C07' OR h_3ATC17='C07' OR h_3ATC18='C07' OR
h_3ATC19='C07' OR h_3ATC20='C07') hmed_beta=1.
VARIABLE LABELS hmed_beta 'use of beta blocking agents'.
VALUE LABELS   hmed_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*create a variable: use of anticoagulant drugs (vitamine K antagonists, DOACs, dabigatran (atc codes
B01AA, B01AF, B01AE)) yes/no.
compute hmed_stolling=0.
If (hmvar13 le -1) hmed_stolling=-1.
If (h_5ATC1='B01AA' OR h_5ATC2='B01AA' OR h_5ATC3='B01AA' OR h_5ATC4='B01AA' OR
h_5ATC5='B01AA' OR h_5ATC6='B01AA' OR
h_5ATC7='B01AA' OR h_5ATC8='B01AA' OR h_5ATC9='B01AA' OR h_5ATC10='B01AA' OR
h_5ATC11='B01AA' OR h_5ATC12='B01AA' OR h_5ATC13='B01AA' OR
h_5ATC14='B01AA' OR h_5ATC15='B01AA' OR h_5ATC16='B01AA' OR h_5ATC17='B01AA' OR
h_5ATC18='B01AA' OR h_5ATC19='B01AA' OR h_5ATC20='B01AA') hmed_stolling=1.
If (h_5ATC1='B01AF' OR h_5ATC2='B01AF' OR h_5ATC3='B01AF' OR h_5ATC4='B01AF' OR
h_5ATC5='B01AF' OR h_5ATC6='B01AF' OR
h_5ATC7='B01AF' OR h_5ATC8='B01AF' OR h_5ATC9='B01AF' OR h_5ATC10='B01AF' OR
h_5ATC11='B01AF' OR h_5ATC12='B01AF' OR h_5ATC13='B01AF' OR
h_5ATC14='B01AF' OR h_5ATC15='B01AF' OR h_5ATC16='B01AF' OR h_5ATC17='B01AF' OR
h_5ATC18='B01AF' OR h_5ATC19='B01AF' OR h_5ATC20='B01AF') hmed_stolling=1.
If (h_5ATC1='B01AE' OR h_5ATC2='B01AE' OR h_5ATC3='B01AE' OR h_5ATC4='B01AE' OR
h_5ATC5='B01AE' OR h_5ATC6='B01AE' OR
h_5ATC7='B01AE' OR h_5ATC8='B01AE' OR h_5ATC9='B01AE' OR h_5ATC10='B01AE' OR
h_5ATC11='B01AE' OR h_5ATC12='B01AE' OR h_5ATC13='B01AE' OR
h_5ATC14='B01AE' OR h_5ATC15='B01AE' OR h_5ATC16='B01AE' OR h_5ATC17='B01AE' OR
h_5ATC18='B01AE' OR h_5ATC19='B01AE' OR h_5ATC20='B01AE') hmed_stolling=1.
VARIABLE LABELS hmed_stolling 'use of anticoagulants'.
VALUE LABELS   hmed_stolling
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*combining anticoagulants and betablocking agents: use of both, yes/no.
```

```
compute hmed_stol_beta=-3.
If (hmed_stolling=-1) hmed_stol_beta=-1.
If (hmed_stolling=1 and hmed_beta=1) hmed_stol_beta=1.
If (hmed_stolling=0 or hmed_beta=0) hmed_stol_beta=0.
VARIABLE LABELS hmed_stol_beta 'use of both beta blocking agent AND anticoagulantia'.
VALUE LABELS   hmed_stol_beta
        -1 'missing'
         0 'no'
         1 'yes'.
EXECUTE.

*some diuretics are combination preps and therefore (incorrectly) not included in the diuretics
variable.
*C07B C07C  C07D C02L C09B C09D C08G
C09AX C09CX C01AA.

*C07B C07C  C07D C02L C09B C09D C08G .
If (h_4ATC1='C07B' OR h_4ATC2='C07B' OR h_4ATC3='C07B' OR h_4ATC4='C07B' OR h_4ATC5='C07B'
OR h_4ATC6='C07B' OR
h_4ATC7='C07B' OR h_4ATC8='C07B' OR h_4ATC9='C07B' OR h_4ATC10='C07B' OR h_4ATC11='C07B'
OR h_4ATC12='C07B' OR h_4ATC13='C07B' OR
h_4ATC14='C07B' OR h_4ATC15='C07B' OR h_4ATC16='C07B' OR h_4ATC17='C07B' OR
h_4ATC18='C07B' OR h_4ATC19='C07B' OR h_4ATC20='C07B') hmed_diu=1.
If (h_4ATC1='C07C' OR h_4ATC2='C07C' OR h_4ATC3='C07C' OR h_4ATC4='C07C' OR h_4ATC5='C07C'
OR h_4ATC6='C07C' OR
h_4ATC7='C07C' OR h_4ATC8='C07C' OR h_4ATC9='C07C' OR h_4ATC10='C07C' OR h_4ATC11='C07C'
OR h_4ATC12='C07C' OR h_4ATC13='C07C' OR
h_4ATC14='C07C' OR h_4ATC15='C07C' OR h_4ATC16='C07C' OR h_4ATC17='C07C' OR
h_4ATC18='C07C' OR h_4ATC19='C07C' OR h_4ATC20='C07C') hmed_diu=1.
If (h_4ATC1='C07D' OR h_4ATC2='C07D' OR h_4ATC3='C07D' OR h_4ATC4='C07D' OR
h_4ATC5='C07D' OR h_4ATC6='C07D' OR
h_4ATC7='C07D' OR h_4ATC8='C07D' OR h_4ATC9='C07D' OR h_4ATC10='C07D' OR
h_4ATC11='C07D' OR h_4ATC12='C07D' OR h_4ATC13='C07D' OR
h_4ATC14='C07D' OR h_4ATC15='C07D' OR h_4ATC16='C07D' OR h_4ATC17='C07D' OR
h_4ATC18='C07D' OR h_4ATC19='C07D' OR h_4ATC20='C07D') hmed_diu=1.
If (h_4ATC1='C02L' OR h_4ATC2='C02L' OR h_4ATC3='C02L' OR h_4ATC4='C02L' OR h_4ATC5='C02L'
OR h_4ATC6='C02L' OR
h_4ATC7='C02L' OR h_4ATC8='C02L' OR h_4ATC9='C02L' OR h_4ATC10='C02L' OR h_4ATC11='C02L'
OR h_4ATC12='C02L' OR h_4ATC13='C02L' OR
h_4ATC14='C02L' OR h_4ATC15='C02L' OR h_4ATC16='C02L' OR h_4ATC17='C02L' OR
h_4ATC18='C02L' OR h_4ATC19='C02L' OR h_4ATC20='C02L') hmed_diu=1.
If (h_4ATC1='C09BA' OR h_4ATC2='C09BA' OR h_4ATC3='C09BA' OR h_4ATC4='C09BA' OR
h_4ATC5='C09BA' OR h_4ATC6='C09BA' OR
h_4ATC7='C09BA' OR h_4ATC8='C09BA' OR h_4ATC9='C09BA' OR h_4ATC10='C09BA' OR
h_4ATC11='C09BA' OR h_4ATC12='C09BA' OR h_4ATC13='C09BA' OR
h_4ATC14='C09BA' OR h_4ATC15='C09BA' OR h_4ATC16='C09BA' OR h_4ATC17='C09BA' OR
h_4ATC18='C09BA' OR h_4ATC19='C09BA' OR h_4ATC20='C09BA') hmed_diu=1.
If (h_4ATC1='C09DA' OR h_4ATC2='C09DA' OR h_4ATC3='C09DA' OR h_4ATC4='C09DA' OR
h_4ATC5='C09DA' OR h_4ATC6='C09DA' OR
h_4ATC7='C09DA' OR h_4ATC8='C09DA' OR h_4ATC9='C09DA' OR h_4ATC10='C09DA' OR
h_4ATC11='C09DA' OR h_4ATC12='C09DA' OR h_4ATC13='C09DA' OR
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h_4ATC14='C09DA' OR h_4ATC15='C09DA' OR h_4ATC16='C09DA' OR h_4ATC17='C09DA' OR
h_4ATC18='C09DA' OR h_4ATC19='C09DA' OR h_4ATC20='C09DA') hmed_diu=1.
If (h_4ATC1='C08G' OR h_4ATC2='C08G' OR h_4ATC3='C08G' OR h_4ATC4='C08G' OR
h_4ATC5='C08G' OR h_4ATC6='C08G' OR
h_4ATC7='C08G' OR h_4ATC8='C08G' OR h_4ATC9='C08G' OR h_4ATC10='C08G' OR
h_4ATC11='C08G' OR h_4ATC12='C08G' OR h_4ATC13='C08G' OR
h_4ATC14='C08G' OR h_4ATC15='C08G' OR h_4ATC16='C08G' OR h_4ATC17='C08G' OR
h_4ATC18='C08G' OR h_4ATC19='C08G' OR h_4ATC20='C08G') hmed_diu=1.
EXECUTE.

*C09AX C09CX C01AA.
If (h_5ATC1='C09AX' OR h_5ATC2='C09AX' OR h_5ATC3='C09AX' OR h_5ATC4='C09AX' OR
h_5ATC5='C09AX' OR h_5ATC6='C09AX' OR
h_5ATC7='C09AX' OR h_5ATC8='C09AX' OR h_5ATC9='C09AX' OR h_5ATC10='C09AX' OR
h_5ATC11='C09AX' OR h_5ATC12='C09AX' OR h_5ATC13='C09AX' OR
h_5ATC14='C09AX' OR h_5ATC15='C09AX' OR h_5ATC16='C09AX' OR h_5ATC17='C09AX' OR
h_5ATC18='C09AX' OR h_5ATC19='C09AX' OR h_5ATC20='C09AX') hmed_diu=1.
If (h_5ATC1='C09CX' OR h_5ATC2='C09CX' OR h_5ATC3='C09CX' OR h_5ATC4='C09CX' OR
h_5ATC5='C09CX' OR h_5ATC6='C09CX' OR
h_5ATC7='C09CX' OR h_5ATC8='C09CX' OR h_5ATC9='C09CX' OR h_5ATC10='C09CX' OR
h_5ATC11='C09CX' OR h_5ATC12='C09CX' OR h_5ATC13='C09CX' OR
h_5ATC14='C09CX' OR h_5ATC15='C09CX' OR h_5ATC16='C09CX' OR h_5ATC17='C09CX' OR
h_5ATC18='C09CX' OR h_5ATC19='C09CX' OR h_5ATC20='C09CX') hmed_diu=1.
If (h_5ATC1='C01AA' OR h_5ATC2='C01AA' OR h_5ATC3='C01AA' OR h_5ATC4='C01AA' OR
h_5ATC5='C01AA' OR h_5ATC6='C01AA' OR
h_5ATC7='C01AA' OR h_5ATC8='C01AA' OR h_5ATC9='C01AA' OR h_5ATC10='C01AA' OR
h_5ATC11='C01AA' OR h_5ATC12='C01AA' OR h_5ATC13='C01AA' OR
h_5ATC14='C01AA' OR h_5ATC15='C01AA' OR h_5ATC16='C01AA' OR h_5ATC17='C01AA' OR
h_5ATC18='C01AA' OR h_5ATC19='C01AA' OR h_5ATC20='C01AA') hmed_diu=1.
EXECUTE.

*********************year of interview (2011 or 2012).
COMPUTE t8_year=XDATE.YEAR(t8_dat).
VARIABLE LABELS t8_year "LASA main interview year (w8)".
VARIABLE LEVEL t8_year(SCALE).
FORMATS t8_year(F8.0).
VARIABLE WIDTH t8_year(8).
EXECUTE.

*********************ARRHYTHMIA (ARI) at H*********************.
*Selfreport surgery implantation of pacemaker.
COMPUTE h_surARI=-3.
IF (hhart15d le -1) h_surARI=-1.
IF (hhart01 le -1) h_surARI=-1.
IF (hhart15 le -1) h_surARI=-1.
IF (hhart01=0 or hhart01=1) h_surARI=0.
IF (hhart15d=0) h_surARI=0.
IF (hhart15=1) h_surARI=0.
IF (hhart15d=1) h_surARI=1.
VARIABLE LABELS h_surARI 'self report surgery: pacemaker'.
VALUE LABELS h_surARI
        -1 'missing'

0 'no'
                  1 'yes'.

*use of anti arrythmic medication.
RECODE hmed_ARI (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO h_mARI.
IF (hmed_ino=1) h_mARI=1.
IF (hmvar13=1) h_mARI=0.
IF (hmvar13 le -1) h_mARI=-1.
VARIABLE LABELS h_mARI 'use of antiarrhythmics'.
VALUE LABELS h_mARI
                  -1 'missing'
                  0 'no'
                  1 'yes'.

*GP diagnosis of ARI.
COMPUTE h_gpARI=-3.
IF (hgarrth le -1) h_gpARI=-1.
IF (t8_year le -1) h_gpARI=-1.
IF (hgarrth=0) h_gpARI=0.
IF (hgarrth=1 and hgarrthy ge 5) h_gpARI=0.
IF (hgarrth=1 and hgarrthy ge 4 and t8_year=2011) h_gpARI=0.
IF (hgarrth=1 and (hgarrthy ge 1 and hgarrthy le 3)) h_gpARI=1.
IF (hgarrth=1 and (hgarrthy=4 and t8_YEAR=2012)) h_gpARI=1.
IF (hgarrth=1 and hgarrthy le -1) h_gpARI=2.
IF (hgarrth=1 and hgarrthy=1) h_gpARI=1.
IF (fgarrth=1) h_gpARI=1.
IF (egarrth=1) h_gpARI=1.
IF (cgarrth=1) h_gpARI=1.
VARIABLE LABELS h_gpARI 'gp diagnosis: cardiac arrhythmia'.
VALUE LABELS h_gpARI
                  -1 'missing'
                  0 'no'
                  1 'yes'
                  2 'diagnose = yes, but year = missing'.

*ARI algorithm: medication, GP diagnosis and SR implantation of pacemaker combined.
compute h_alg_ARI=-3.
IF (h_mARI=1) h_alg_ARI=1.
IF (h_mARI=0 and h_gpARI=1 and (hmed_stol_beta=1)) h_alg_ARI=1.
IF (h_mARI=0 and h_gpARI=1 and (hmed_stol_beta=0) and (hgarrths=1 or cgarrths=1 or egarrths=1
or fgarrths=1)) h_alg_ARI=1.
IF (h_mARI=0 and h_gpARI=1 and (hmed_stol_beta=0) and hgarrths le 0 and h_surARI=1)
h_alg_ARI=1.
IF (h_mARI=0 and h_gpARI=1 and (hmed_stol_beta=0) and hgarrths le 0 and h_surARI le 0)
h_alg_ARI=2.
IF (h_mARI=0 and h_gpARI=0 and h_surARI=1) h_alg_ARI=3.
IF (h_mARI=0 and h_gpARI=0 and h_surARI le 0) h_alg_ARI=0.
IF (h_mARI=0 and h_gpARI=2 and (hmed_stol_beta=1)) h_alg_ARI=1.
IF (h_mARI=0 and h_gpARI=2 and (hmed_stol_beta=0) and h_surARI=1) h_alg_ARI=1.
IF (h_mARI=0 and h_gpARI=2 and (hmed_stol_beta=0) and h_surARI le 0) h_alg_ARI=0.
IF (h_mARI=0 and h_gpARI=2 and (hmed_stol_beta=0) and h_surARI le -1) h_alg_ARI=0.
IF (h_mARI=0 and h_gpARI=-1 and h_surARI=1) h_alg_ARI=2.

IF (h_mARI=0 and h_gpARI=-1 and (hmed_stol_beta=0) and h_surARI=0) h_alg_ARI=0.
IF (h_mARI=0 and h_gpARI=-1 and (hmed_stol_beta=0) and h_surARI le -1) h_alg_ARI=-1.
IF (h_mARI=0 and h_gpARI=-1 and (hmed_stol_beta=1) and h_surARI le 0) h_alg_ARI=-1.
IF (h_mARI le -1 and h_gpARI=1 and (hgarrths=1 or cgarrths=1 or egarrths=1 or fgarrths=1))
h_alg_ARI=1.
IF (h_mARI le -1 and h_gpARI=1 and hgarrths le 0 and h_surARI=1) h_alg_ARI=1.
IF (h_mARI le -1 and h_gpARI=1 and hgarrths le 0 and h_surARI le 0) h_alg_ARI=2.
IF (h_mARI le -1 and h_gpARI=0 and h_surARI=1) h_alg_ARI=3.
IF (h_mARI le -1 and h_gpARI=0 and h_surARI le 0) h_alg_ARI=0.
IF (h_mARI le -1 and h_gpARI=2 and h_surARI=1) h_alg_ARI=1.
IF (h_mARI le -1 and h_gpARI=2 and h_surARI le 0) h_alg_ARI=-1.
IF (h_mARI le -1 and h_gpARI le -1 and h_surARI=1) h_alg_ARI=2.
IF (h_mARI le -1 and h_gpARI le -1 and h_surARI le 0) h_alg_ARI=-1.
IF (h_alg_ARI=-1 and (htrhart1=0 or htphart1=0)) h_alg_ARI=0.
VARIABLE LABELS h_alg_ARI 'H wave: arrythmia'.
VALUE LABELS h_alg_ARI
         -1 'missing'
         0 'no'
         1 'definite'
         2 'possible'
         3 'contradictory'.

*********************CEREBROVASCULAR ACCIDENT (CVA) at H*********************.
*Selfreport diagnosis of CVA.
COMPUTE h_srCVA=-3.
IF (hcva01=2 or hcva01=3) h_srCVA=1.
IF (hcva01=0 or hcva01=1) h_srCVA=0.
IF (htpcva01=1) h_srCVA=1.
IF (htpcva01=0) h_srCVA=0.
IF (htrcva01=1) h_srCVA=1.
IF (htrcva01=0) h_srCVA=0.
IF (hcva01 le -1 and htpcva01 le -1 and htrcva01 le -1) h_srCVA=-1.
VARIABLE LABELS h_srCVA 'self report: CVA'.
VALUE LABELS h_srCVA
         -1 'missing'
         0 'no'
         1 'yes'.

*GP diagnosis of CVA.
COMPUTE h_gpCVA=-3.
IF (hgcva le -1) h_gpCVA=-1.
IF (t8_year le -1) h_gpCVA=-1.
IF (hgcva=0) h_gpCVA=0.
IF (hgcva=1 and hgcvay ge 5) h_gpCVA=0.
IF (hgcva=1 and hgcvay ge 4 and t8_year=2011) h_gpCVA=0.
IF (hgcva=1 and (hgcvay ge 1 and hgcvay le 3)) h_gpCVA=1.
IF (hgcva=1 and (hgcvay=4 and t8_YEAR=2012)) h_gpCVA=1.
IF (hgcva=1 and hgcvay le -1) h_gpCVA=2.
IF (hgcva=1 and hgcvay=1) h_gpCVA=1.
IF (fgcva=1) h_gpCVA=1.
IF (egcva=1) h_gpCVA=1.
IF (cgcva=1) h_gpCVA=1.

IF (bgcva=1) h_gpCVA=1.
VARIABLE LABELS h_gpCVA 'gp diagnosis: CVA'.
VALUE LABELS h_gpCVA
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CVA algorithm: GP diagnosis and SR combined.
COMPUTE h_alg_CVA=-3.
IF (h_gpCVA=1 and (hgcvas=1 or cgcvas=1 or egcvas=1 or fgcvas=1)) h_alg_CVA=1.
IF (h_gpCVA=1 and hgcvas le 0 and h_srCVA=1) h_alg_CVA=1.
IF (h_gpCVA=1 and hgcvas le 0 and h_srCVA=0) h_alg_CVA=3.
IF (h_gpCVA=1 and hgcvas le 0 and h_srCVA le -1) h_alg_CVA=2.
IF (h_gpCVA=0 and h_srCVA=1) h_alg_CVA=3.
IF (h_gpCVA=0 and h_srCVA=0) h_alg_CVA=0.
IF (h_gpCVA=0 and h_srCVA le -1) h_alg_CVA=0.
IF (h_gpCVA=2 and h_srCVA=1) h_alg_CVA=1.
IF (h_gpCVA=2 and h_srCVA=0) h_alg_CVA=0.
IF (h_gpCVA=2 and h_srCVA le -1) h_alg_CVA=-1.
IF (h_gpCVA le -1 and h_srCVA=1) h_alg_CVA=2.
IF (h_gpCVA le -1 and h_srCVA=0) h_alg_CVA=0.
IF (h_gpCVA le -1 and h_srCVA le -1) h_alg_CVA=-1.
VARIABLE LABELS h_alg_CVA 'H wave: cerebrovascular accident'.
VALUE LABELS h_alg_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************MYOCARDIAL INFARCTION (MI) at H*********************.
*Selfreport diagnosis of MI.
COMPUTE h_srMI=-5.
IF (hhart01 le -1) h_srMI=-1.
IF ((hhart01=2 or hhart01=3) and hhart05 le -1) h_srMI=-1.
IF (hhart05=1) h_srMI=0.
IF (hhart01=0 or hhart01=1) h_srMI=0.
IF (hhart05=2) h_srMI=1.
IF (htphart1=0 or htrhart1=0) h_srMI=0.
VARIABLE LABELS h_srMI 'self report: myocardial infarction'.
VALUE LABELS h_srMI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of MI.
COMPUTE h_gpmi=-3.
IF (hgmiy le -1) h_gpMI=-1.
IF (t8_year le -1) h_gpMI=-1.

IF (hgmi=0) h_gpMI=0.
IF (hgmi=1 and hgmiy ge 5) h_gpMI=0.
IF (hgmi=1 and hgmiy ge 4 and t8_year=2011) h_gpMI=0.
IF (hgmi=1 and (hgmiy ge 1 and hgmiy le 3)) h_gpMI=1.
IF (hgmi=1 and (hgmiy=4 and t8_YEAR=2012)) h_gpMI=1.
IF (hgmi=1 and hgmiy le -1) h_gpMI=2.
IF (hgmi=1 and hgmiy=1) h_gpMI=1.
IF (fgmi=1) h_gpMI=1.
IF (egmi=1) h_gpMI=1.
IF (cgmi=1) h_gpMI=1.
VARIABLE LABELS h_gpMI 'gp diagnosis: MI'.
VALUE LABELS h_gpMI
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*MI algorithm: GP diagnosis and SR combined.
COMPUTE h_alg_MI=-3.
IF (h_gpMI=1 and (hgmis=1 or cgmis=1 or egmis=1 or fgmis=1)) h_alg_MI=1.
IF (h_gpMI=1 and hgmis le 0 and h_srMI=1) h_alg_MI=1.
IF (h_gpMI=1 and hgmis le 0 and h_srMI=0) h_alg_MI=3.
IF (h_gpMI=1 and hgmis le 0 and h_srMI le -1) h_alg_MI=2.
IF (h_gpMI=0 and h_srMI=1) h_alg_MI=3.
IF (h_gpMI=0 and h_srMI=0) h_alg_MI=0.
IF (h_gpMI=0 and h_srMI le -1) h_alg_MI=0.
IF (h_gpMI=2 and h_srMI=1) h_alg_MI=1.
IF (h_gpMI=2 and h_srMI=0) h_alg_MI=0.
IF (h_gpMI=2 and h_srMI le -1) h_alg_MI=-1.
IF (h_gpMI le -1 and h_srMI=1) h_alg_MI=2.
IF (h_gpMI le -1 and h_srMI=0) h_alg_MI=0.
IF (h_gpMI le -1 and h_srMI le -1) h_alg_MI=-1.
VARIABLE LABELS h_alg_MI 'H wave: myocardial infarction'.
VALUE LABELS h_alg_MI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************ANGINA PECTORIS (AP) at H*********************.
*Selfreport diagnosis of AP.
COMPUTE h_srAP=-5.
IF (hhart01 le -1) h_srAP=-1.
IF ((hhart01=2 or hhart01=3) and hhart10 le -1) h_srAP=-1.
IF (hhart01=0 or hhart01=1) h_srAP=0.
IF (hhart11=1 or hdiabe12=1) h_srAP=0.
if (((hhart01=2 or hhart01=3) and hhart10=1) OR ((hdiabe01=2 or hdiabe01=3) and hdiabe11=1))
h_srAP=0.

IF (((hhart01=2 or hhart01=3) and hhart10 ge 4) OR ((hdiabe01=2 or hdiabe01=3) and hdiabe11 ge 4))
h_srAP=0.
IF (((hhart01=2 or hhart01=3) and hhart10=2 and hhart11 le -1) OR ((hdiabe01=2 or hdiabe01=3) and
hdiabe11=2 and hdiabe12 le -1)) h_srAP=2.
IF (hhart11=2 or hdiabe12=2) h_srAP=1.
IF (hhart10=3 or hdiabe11=3) h_srAP=1.
IF (htphart1=0 or htrhart1=0) h_srAP=0.
VARIABLE LABELS h_srAP 'self report: angina pectoris'.
VALUE LABELS h_srAP
          -1 'missing'
          0 'no'
          1 'yes'
          2 'possible'.

*GP diagnosis of AP.
COMPUTE h_gpAP=-3.
IF (hgap le -1) h_gpAP=-1.
IF (t8_year le -1) h_gpAP=-1.
IF (hgap=0) h_gpAP=0.
IF (hgap=1 and hgapy ge 5) h_gpAP=0.
IF (hgap=1 and hgapy ge 4 and t8_year=2011) h_gpAP=0.
IF (hgap=1 and (hgapy ge 1 and hgapy le 3)) h_gpAP=1.
IF (hgap=1 and (hgapy=4 and t8_YEAR=2012)) h_gpAP=1.
IF (hgap=1 and hgapy le -1) h_gpAP=2.
IF (hgap=1 and hgapy=1) h_gpAP=1.
IF (fgap=1) h_gpAP=1.
IF (egap=1) h_gpAP=1.
IF (cgap=1) h_gpAP=1.
VARIABLE LABELS h_gpAP 'gp diagnosis: angina pectoris'.
VALUE LABELS h_gpAP
          -2 'dropout'
          -1 'missing'
          0 'no'
          1 'yes'
          2 'diagnose = yes, but year = missing'.

*use of AP medication: nitrates.
RECODE hmed_ang (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO h_mAP.
IF (hmvar13 le -1) h_mAP=-1.
IF (hmvar13=1) h_mAP=0.
VARIABLE LABELS h_mAP 'use of nitrates'.
VALUE LABELS h_mAP
          -1 'missing'
          0 'no'
          1 'yes'.

*AP algorithm: medication, GP diagnosis and SR combined.
COMPUTE h_alg_AP=-3.
IF (h_mAP=1) h_alg_AP=1.
IF (h_mAP le 0 and h_srAP=1 and h_gpAP=1) h_alg_AP=1.
IF (h_mAP le 0 and h_srAP=1 and h_gpAP=0) h_alg_AP=3.
IF (h_mAP le 0 and h_srAP=1 and h_gpap=2) h_alg_AP=1.

IF (h_mAP le 0 and h_srAP=1 and h_gpAP le -1) h_alg_AP=2.
IF (h_mAP le 0 and h_srAP=0 and h_gpAP=1 and (hgaps=1 or cgaps=1 or egaps=1 or fgaps=1)) h_alg_AP=1.
IF (h_mAP le 0 and h_srAP=0 and h_gpAP=1 and hgaps le 0) h_alg_AP=3.
IF (h_mAP le 0 and h_srAP=0 and h_gpAP=0) h_alg_AP=0.
IF (h_mAP le 0 and h_srAP=0 and h_gpap=2) h_alg_AP=0.
IF (h_mAP le 0 and h_srAP=0 and h_gpAP le -1) h_alg_AP=0.
IF (h_mAP le 0 and h_srAP=2 and h_gpAP=1) h_alg_AP=1.
IF (h_mAP le 0 and h_srAP=2 and h_gpAP=0) h_alg_AP=0.
IF (h_mAP le 0 and h_srAP=2 and h_gpAP=2) h_alg_AP=-1.
IF (h_mAP le 0 and h_srAP=2 and h_gpap=-1) h_alg_AP=-1.
IF (h_mAP le 0 and h_srAP le -1 and h_gpAP=1 and (hgaps=1 or cgaps=1 or egaps=1 or fgaps=1)) h_alg_AP=1.
IF (h_mAP le 0 and h_srAP le -1 and h_gpAP=1 and hgaps le 0) h_alg_AP=2.
IF (h_mAP le 0 and h_srAP le -1 and h_gpAP=0) h_alg_AP=0.
IF (h_mAP le 0 and h_srAP le -1 and h_gpap=2) h_alg_AP=-1.
IF (h_mAP le 0 and h_srAP le -1 and h_gpAP le -1) h_alg_AP=-1.
VARIABLE LABELS h_alg_AP 'H wave: angina pectoris'.
VALUE LABELS h_alg_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

********************CONGESTIVE HEART FAILURE (CHF) at H********************.
*Selfreport diagnosis of CHF.
COMPUTE h_srCHF=-3.
IF (hhart01 le -1) h_srCHF=-1.
IF ((hhart01=2 or hhart01=3) and hhart12 le -1) h_srCHF=-1.
IF (hhart01=0 or hhart01=1) h_srCHF=0.
IF ((hhart01=2 or hhart01=3) and hhart12=1) h_srCHF=0.
IF ((hhart01=2 or hhart01=3) and hhart12=2) h_srCHF=1.
IF (htphart1=0 or htrhart1=0) h_srCHF=0.
VARIABLE LABELS h_srCHF 'self reported diagnosis of congestive heart failure'.
VALUE LABELS h_srCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CHF.
COMPUTE h_gpCHF=-3.
IF (hgchf le -1) h_gpCHF=-1.
IF (t8_year le -1) h_gpCHF=-1.
IF (hgchf=0) h_gpCHF=0.
IF (hgchf=1 and hgchfy ge 5) h_gpCHF=0.
IF (hgchf=1 and hgchfy ge 4 and t8_year=2011) h_gpCHF=0.
IF (hgchf=1 and (hgchfy ge 1 and hgchfy le 3)) h_gpCHF=1.
IF (hgchf=1 and (hgchfy=4 and t8_YEAR=2012)) h_gpCHF=1.
IF (hgchf=1 and hgchfy le -1) h_gpCHF=2.
IF (hgchf=1 and hgchfy=1) h_gpCHF=1.
IF (fgchf=1) h_gpCHF=1.

IF (egchf=1) h_gpCHF=1.
IF (cgchf=1) h_gpCHF=1.
VARIABLE LABELS h_gpCHF 'gp diagnosis: congestive heart failure'.
VALUE LABELS h_gpCHF
          -2 'dropout'
          -1 'missing'
          0 'no'
          1 'yes'
          2 'diagnose = yes, but year = missing'.

*CHF medication: diuretics, antihypertensives, nitrates, inotropics, beta blocking agents.
compute h_mCHF=0.
if (hmed_diu=1 and (hmed_hyp=1 or hmed_ang=1 or hmed_ino=1 or hmed_beta=1)) h_mCHF=1.
IF (hmvar13 le -1) h_mCHF=-1.
IF (hmvar13=1) h_mCHF=0.
VARIABLE LABELS h_mCHF 'medication for congestive heart failure'.
VALUE LABELS h_mCHF
          -1 'missing'
          0 'no'
          1 'yes'.

*CHF algorithm: medication, GP diagnosis and SR combined.
COMPUTE h_alg_CHF=-3.
IF (h_gpCHF=1 and (hgchfs=1 or cgchfs=1 or egchfs=1 or fgchfs=1)) h_alg_CHF=1.
IF (h_gpCHF=1 and hgchfs le 0 and h_srCHF=1) h_alg_CHF=1.
IF (h_gpCHF=1 and hgchfs le 0 and h_srCHF le 0 and h_mCHF=1) h_alg_CHF=1.
IF (h_gpCHF=1 and hgchfs le 0 and h_srCHF=0 and h_mCHF=0) h_alg_CHF=2.
IF (h_gpCHF=1 and hgchfs le 0 and h_srCHF le 0 and h_mCHF le -1) h_alg_CHF=2.
IF (h_gpCHF=1 and hgchfs le 0 and h_srCHF le -1 and h_mCHF le 0) h_alg_CHF=2.
IF (h_gpCHF=0 and h_srCHF=1 and h_mCHF=1) h_alg_CHF=1.
IF (h_gpCHF=0 and h_srCHF=1 and h_mCHF le 0) h_alg_CHF=2.
IF (h_gpCHF=0 and h_srCHF le 0 and h_mCHF=1) h_alg_CHF=3.
IF (h_gpCHF=0 and h_srCHF le 0 and h_mCHF le 0) h_alg_CHF=0.
IF (h_gpCHF=2 and h_srCHF=1) h_alg_CHF=1.
IF (h_gpCHF=2 and h_srCHF le 0 and h_mCHF=1) h_alg_CHF=1.
IF (h_gpCHF=2 and h_srCHF le 0 and h_mCHF le 0) h_alg_CHF=0.
IF (h_gpCHF=2 and h_srCHF=0 and h_mCHF=-1) h_alg_CHF=-1.
IF (h_gpCHF=2 and h_srCHF le -1 and h_mCHF le -1) h_alg_CHF=-1.
IF (h_gpCHF le -1 and h_srCHF=1 and h_mCHF=1) h_alg_CHF=1.
IF (h_gpCHF le -1 and h_srCHF=1 and h_mCHF le 0) h_alg_CHF=2.
IF (h_gpCHF le -1 and h_srCHF=0 and h_mCHF=1) h_alg_CHF=2.
IF (h_gpCHF le -1 and h_srCHF=0 and h_mCHF le 0) h_alg_CHF=0.
IF (h_gpCHF le -1 and h_srCHF le -1 and h_mCHF=1) h_alg_CHF=2.
IF (h_gpCHF le -1 and h_srCHF le -1 and h_mCHF=0) h_alg_CHF=0.
IF (h_gpCHF le -1 and h_srCHF le -1 and h_mCHF le -1) h_alg_CHF=-1.
VARIABLE LABELS h_alg_CHF 'H wave: congestive heart failure'.
VALUE LABELS h_alg_CHF
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'.

**********************PERIPHERAL ARTERIAL DISEASE (PAD) at H********************.
*Selfreport diagnosis of PAD.
COMPUTE h_srPAD=-5.
IF (hartvei1 le -1) h_srPAD=-1.
IF ((hartvei1=2 or hartvei1=3) and hartvei5 le -1) h_srPAD=-1.
IF (hartvei1=0 or hartvei1=1) h_srPAD=0.
IF (hartvei7=1 or hdiabe09=1) h_srPAD=0.
IF (hartvei5=1 or hdiabe07=1) h_srPAD=0.
IF ((hartvei5=2 and hartvei7 le -1) or (hdiabe07=2 and hdiabe09 le -1)) h_srPAD=2.
IF (hartvei7=2 or hdiabe09=2) h_srPAD=1.
IF (htpartv1=0 OR htrartv1=0) h_srPAD=0.
IF (htpartv1=1 OR htrartv1=1) h_srPAD=2.
IF (hartvei1 le -1 and htpartv1 le -1 and htrartv1 le -1) h_srPAD=-1.
VARIABLE LABELS h_srPAD 'self reported diagnosis of peripheral artery disease'.
VALUE LABELS h_srPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*Selfreport surgery.
COMPUTE h_surPAD=-3.
IF (hartvei1 le -1) h_surPAD=-1.
IF ((hartvei1=2 or hartvei1=3) and hartve8 le -1) h_surPAD=-1.
IF (hartve8=1) h_surPAD=0.
IF ((hartve8c=0 AND hartve8d=0) AND (hartve8b le 0)) h_surPAD=0.
IF (hartvei1=0 or hartvei1=1) h_surPAD=0.
IF ((hartve8c le 0 AND hartve8d le 0) AND (hartve8b=1)) h_surPAD=2.
IF (hartve8c=1 OR hartve8d=1) h_surPAD=1.
VARIABLE LABELS h_surPAD 'self reported surgery of peripheral arteries'.
VALUE LABELS h_surPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of PAD.
COMPUTE h_gpPAD=-3.
IF (hgartvei le -1) h_gpPAD=-1.
IF (t8_year le -1) h_gpPAD=-1.
IF (hgartvei=0) h_gpPAD=0.
IF (hgartvei=1 and hgartvey ge 5) h_gpPAD=0.
IF (hgartvei=1 and hgartvey ge 4 and t8_year=2011) h_gpPAD=0.
IF (hgartvei=1 and (hgartvey ge 1 and hgartvey le 3)) h_gpPAD=1.
IF (hgartvei=1 and (hgartvey=4 and t8_YEAR=2012)) h_gpPAD=1.
IF (hgartvei=1 and hgartvey le -1) h_gpPAD=2.
IF (hgartvei=1 and hgartvey=1) h_gpPAD=1.
IF (fgartvei=1) h_gpPAD=1.
IF (egartvei=1) h_gpPAD=1.
IF (cgartvei=1) h_gpPAD=1.
IF (bgclan=1) h_gpPAD=1.

VARIABLE LABELS h_gpPAD 'gp diagnosis: PAD'.
VALUE LABELS h_gpPAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*PAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE h_alg_PAD=-3.
IF (h_surPAD=1) h_alg_PAD=1.
IF (h_surPAD le 0 and h_gpPAD=1 and (hgartves=1 or cgartves=1 or egartves=1 or fgartves=1))
h_alg_PAD=1.
IF (h_surPAD le 0 and h_gpPAD=1 and hgartves le 0 and h_srPAD=1) h_alg_PAD=1.
IF (h_surPAD le 0 and h_gpPAD=1 and hgartves le 0 and h_srPAD=0) h_alg_PAD=3.
IF (h_surPAD le 0 and h_gpPAD=1 and hgartves le 0 and h_srPAD le -1) h_alg_PAD=2.
IF (h_surPAD le 0 and h_gpPAD=1 and hgartves le 0 and h_srPAD=2) h_alg_PAD=1.
IF (h_surPAD le 0 and h_gpPAD=0 and h_srPAD=1) h_alg_PAD=3.
IF (h_surPAD le 0 and h_gpPAD=0 and h_srPAD=0) h_alg_PAD=0.
IF (h_surPAD le 0 and h_gpPAD=0 and h_srPAD le -1) h_alg_PAD=0.
IF (h_surPAD le 0 and h_gpPAD=0 and h_srPAD=2) h_alg_PAD=0.
IF (h_surPAD le 0 and h_gpPAD=2 and h_srPAD=1) h_alg_PAD=1.
IF (h_surPAD le 0 and h_gpPAD=2 and h_srPAD=0) h_alg_PAD=0.
IF (h_surPAD le 0 and h_gpPAD=2 and h_srPAD le -1) h_alg_PAD=-1.
IF (h_surPAD le 0 and h_gpPAD=2 and h_srPAD=2) h_alg_PAD=1.
IF (h_surPAD le 0 and h_gpPAD le -1 and h_srPAD=1) h_alg_PAD=2.
IF (h_surPAD le 0 and h_gpPAD le -1 and h_srPAD=0) h_alg_PAD=0.
IF (h_surPAD le 0 and h_gpPAD le -1 and h_srPAD le -1) h_alg_PAD=-1.
IF (h_surPAD le 0 and h_gpPAD le -1 and h_srPAD=2) h_alg_PAD=-1.
IF (h_surPAD=2 and h_gpPAD=1) h_alg_PAD=1.
IF (h_surPAD=2 and h_gpPAD=0 and h_srPAD=1) h_alg_PAD=1.
IF (h_surPAD=2 and h_gpPAD=0 and h_srPAD=0) h_alg_PAD=0.
IF (h_surPAD=2 and h_gpPAD=0 and h_srPAD le -1) h_alg_PAD=0.
IF (h_surPAD=2 and h_gpPAD=0 and h_srPAD=2) h_alg_PAD=3.
IF (h_surPAD=2 and h_gpPAD=2 and h_srPAD=1) h_alg_PAD=1.
IF (h_surPAD=2 and h_gpPAD le -1 and h_srPAD=1) h_alg_PAD=1.
IF (h_surPAD=2 and h_gpPAD le -1 and h_srPAD=0) h_alg_PAD=0.
IF (h_surPAD=2 and h_gpPAD le -1 and h_srPAD le -1) h_alg_PAD=-1.
IF (h_surPAD=2 and h_gpPAD le -1 and h_srPAD=2) h_alg_PAD=-1.
VARIABLE LABELS h_alg_PAD 'H wave algorithm: peripheral artery disease'.
VALUE LABELS h_alg_PAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CORONARY ARTERY DISEASE (CAD) at H*********************.
*CAD Selfreport surgery.
COMPUTE h_surCAD=-3.
IF ((hhart01=2 or hhart01=3) and hhart15 le -1) h_surCAD=-1.
IF (hhart01 le -1) h_surCAD=-1.

IF (hhart15b le -1 AND hhart15c le -1) h_surCAD=-1.
IF (hhart15b=0 AND hhart15c=0) h_surCAD=0.
IF (hhart15=1) h_surCAD=0.
IF (hhart01=0 or hhart01=1) h_surCAD=0.
IF (hhart15b=1 OR hhart15c=1) h_surCAD=1.
VARIABLE LABELS h_surCAD 'self reported surgery of coronary arteries'.
VALUE LABELS h_surCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*CAD selfreport (=Selfreport of AP or MI).
COMPUTE h_srCAD=-5.
IF (hhart01 le -1) h_srCAD=-1.
IF (h_srMI=0 AND h_srAP=2) h_srCAD=-1.
IF (h_srMI=0 AND h_srAP le -1) h_srCAD=-1.
IF (h_srMI le -1 AND h_srAP=0) h_srCAD=-1.
IF (h_srMI le -1 AND h_srAP=2) h_srCAD=-1.
IF (h_srMI le -1 AND h_srAP le -1) h_srCAD=-1.
IF (h_srMI=0 AND h_srAP=0) h_srCAD=0.
IF (hhart01=0 or hhart01=1) h_srCAD=0.
IF (h_srMI le -1 AND h_srAP=1) h_srCAD=1.
IF (h_srMI=1) h_srCAD=1.
IF (h_srAP=1) h_srCAD=1.
IF (htphart1=0 or htrhart1=0) h_srCAD=0.
VARIABLE LABELS h_srCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS h_srCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CAD (gp diagnosis of AP or MI).
COMPUTE h_gpCAD=-5.
IF (h_gpMI le -1 AND h_gpAP=0) h_gpCAD=-1.
IF (h_gpMI=0 AND h_gpAP le -1) h_gpCAD=-1.
IF (h_gpMI le -1 AND h_gpAP le -1) h_gpCAD=-1.
IF (h_gpMI=0 AND h_gpAP=0) h_gpCAD=0.
IF (h_gpMI=0 AND h_gpAP=2) h_gpCAD=2.
IF (h_gpMI le -1 AND h_gpAP=2) h_gpCAD=2.
IF (h_gpMI=2 AND h_gpAP=0) h_gpCAD=2.
IF (h_gpMI=2 AND h_gpAP=2) h_gpCAD=2.
IF (h_gpMI=2 AND h_gpAP le -1) h_gpCAD=2.
IF (h_gpMI=1) h_gpCAD=1.
IF (h_gpAP=1) h_gpCAD=1.
IF (t8_year le -1) h_gpCAD=-2.
VARIABLE LABELS h_gpCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS h_gpCAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

```
*CAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE h_alg_CAD=-3.
IF (h_mAP le 0 and h_surCAD le 0 and h_srMI le 0 and (h_srAP le 0 or h_srAP=2)  and h_gpMI le 0)
h_alg_CAD=0.
IF (h_mAP le -1 and h_surCAD le -1 and h_srMI le -1 and h_srAP le -1 and h_gpAP le -1 and h_gpMI le
-1) h_alg_CAD=-1.
IF (h_mAP=0 and h_surCAD=0 and h_srMI=0 and h_srAP=0 and h_gpAP=0 and h_gpMI=0)
h_alg_CAD=0.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_srAP=1 and (h_srMI le 0 and h_gpAP le 0 and h_gpMI le
0))) h_alg_CAD=3.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_srMI=1 and (h_srAP le 0 and h_gpAP le 0 and h_gpMI le
0))) h_alg_CAD=3.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpAP=1 and hgaps le 0 and (h_gpMI le 0 or h_gpMI=2) and
h_srAP le 0 and h_srMI le 0)) h_alg_CAD=3.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpMI=1 and hgmis le 0 and (h_gpAP le 0 or h_gpAP=2) and
h_srAP le 0 and h_srMI le 0)) h_alg_CAD=3.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_srAP=1 and (h_srMI le -1 and h_gpAP le -1 and h_gpMI le -
1))) h_alg_CAD=2.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_srMI=1 and (h_srAP le -1 and h_gpAP le -1 and h_gpMI le -
1))) h_alg_CAD=2.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpAP=1 and hgaps le 0 and h_gpMI le -1 and h_srAP le -1
and h_srMI le -1)) h_alg_CAD=2.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpMI=1 and hgmis le 0 and h_gpAP le -1 and h_srAP le -1
and h_srMI le -1)) h_alg_CAD=2.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpAP=2 and (h_gpMI le 0 or h_gpMI=2) and (h_srAP le 0
or h_srAP=2) and h_srMI le 0)) h_alg_CAD=0.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpMI=2  and (h_gpAP le 0 or h_gpAP=2) and (h_srAP le 0
or h_srAP=2) and h_srMI le 0)) h_alg_CAD=0.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpAP=2 and (h_gpMI le -1 or h_gpMI=2) and (h_srAP le -1
or h_srAP=2) and h_srMI le -1)) h_alg_CAD=-1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpMI=2  and (h_gpAP le -1 or h_gpAP=2) and (h_srAP le -1
or h_srAP=2) and h_srMI le -1)) h_alg_CAD=-1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_srAP=1 and (h_srMI=1 OR h_gpAP=1 OR h_gpMI=1)))
h_alg_CAD=1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_srMI=1 and (h_srAP=1 OR h_gpAP=1 OR h_gpMI=1)))
h_alg_CAD=1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpAP=1 and (hgaps=1 or cgaps=1 or egaps=1 or fgaps=1)))
h_alg_CAD=1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpMI=1 and (hgmis=1 or cgmis=1 or egmis=1 or fgmis=1)))
h_alg_CAD=1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpAP=1 and hgaps le 0) and (h_srMI=1 or h_srAP=1 or
h_gpMI=1)) h_alg_CAD=1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpMI=1 and hgmis le 0) and (h_srMI=1 or h_srAP=1 or
h_gpAP=1)) h_alg_CAD=1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_srAP=1 and h_srMI le 0) and (h_gpAP=2 or h_gpMI=2))
h_alg_CAD=1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_srMI=1) and (h_gpAP=2 or h_srAP=2 or h_gpMI=2))
h_alg_CAD=1.
IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpAP=1 and h_srMI le 0) and (h_srAP=2 and h_gpMI=2))
h_alg_CAD=1.
```

IF ((h_mAP le 0 and h_surCAD le 0) and (h_gpMI=1 and h_srMI le 0) and (h_gpAP=2 or h_srAP=2)) h_alg_CAD=1.
IF (h_mAP=1 or h_surCAD=1) h_alg_CAD=1.
VARIABLE LABELS h_alg_CAD 'H wave: coronary artery disease'.
VALUE LABELS h_alg_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************I wave****************.
*create a string variable that consists of the first 3 characters of the ATC code.
string i_3ATC1(a30).
COMPUTE i_3ATC1 = CHAR.SUBSTR(imatc1,1,3) .
string i_3ATC2(a30).
COMPUTE i_3ATC2 = CHAR.SUBSTR(imatc2,1,3) .
string i_3ATC3(a30).
COMPUTE i_3ATC3 = CHAR.SUBSTR(imatc3,1,3) .
string i_3ATC4(a30).
COMPUTE i_3ATC4 = CHAR.SUBSTR(imatc4,1,3) .
string i_3ATC5(a30).
COMPUTE i_3ATC5 = CHAR.SUBSTR(imatc5,1,3) .
string i_3ATC6(a30).
COMPUTE i_3ATC6 = CHAR.SUBSTR(imatc6,1,3) .
string i_3ATC7(a30).
COMPUTE i_3ATC7 = CHAR.SUBSTR(imatc7,1,3) .
string i_3ATC8(a30).
COMPUTE i_3ATC8 = CHAR.SUBSTR(imatc8,1,3) .
string i_3ATC9(a30).
COMPUTE i_3ATC9 = CHAR.SUBSTR(imatc9,1,3) .
string i_3ATC10(a30).
COMPUTE i_3ATC10 = CHAR.SUBSTR(imatc10,1,3) .
string i_3ATC11(a30).
COMPUTE i_3ATC11 = CHAR.SUBSTR(imatc11,1,3) .
string i_3ATC12(a30).
COMPUTE i_3ATC12 = CHAR.SUBSTR(imatc12,1,3) .
string i_3ATC13(a30).
COMPUTE i_3ATC13 = CHAR.SUBSTR(imatc13,1,3) .
string i_3ATC14(a30).
COMPUTE i_3ATC14 = CHAR.SUBSTR(imatc14,1,3) .
string i_3ATC15(a30).
COMPUTE i_3ATC15 = CHAR.SUBSTR(imatc15,1,3) .
string i_3ATC16(a30).
COMPUTE i_3ATC16 = CHAR.SUBSTR(imatc16,1,3) .
string i_3ATC17(a30).
COMPUTE i_3ATC17 = CHAR.SUBSTR(imatc17,1,3) .
string i_3ATC18(a30).
COMPUTE i_3ATC18 = CHAR.SUBSTR(imatc18,1,3) .
string i_3ATC19(a30).

```
COMPUTE i_3ATC19 = CHAR.SUBSTR(imatc19,1,3) .
string i_3ATC20(a30).
COMPUTE i_3ATC20 = CHAR.SUBSTR(imatc20,1,3) .
string i_3ATC21(a30).
COMPUTE i_3ATC21 = CHAR.SUBSTR(imatc21,1,3) .
string i_3ATC22(a30).
COMPUTE i_3ATC22 = CHAR.SUBSTR(imatc22,1,3) .
string i_3ATC23(a30).
COMPUTE i_3ATC23 = CHAR.SUBSTR(imatc23,1,3) .
string i_3ATC24(a30).
COMPUTE i_3ATC24 = CHAR.SUBSTR(imatc24,1,3) .
EXECUTE.

*create a string variable that consists of the first 4 characters of the ATC code.
string i_4ATC1(a30).
COMPUTE i_4ATC1 = CHAR.SUBSTR(imatc1,1,4) .
string i_4ATC2(a30).
COMPUTE i_4ATC2 = CHAR.SUBSTR(imatc2,1,4) .
string i_4ATC3(a30).
COMPUTE i_4ATC3 = CHAR.SUBSTR(imatc3,1,4) .
string i_4ATC4(a30).
COMPUTE i_4ATC4 = CHAR.SUBSTR(imatc4,1,4) .
string i_4ATC5(a30).
COMPUTE i_4ATC5 = CHAR.SUBSTR(imatc5,1,4) .
string i_4ATC6(a30).
COMPUTE i_4ATC6 = CHAR.SUBSTR(imatc6,1,4) .
string i_4ATC7(a30).
COMPUTE i_4ATC7 = CHAR.SUBSTR(imatc7,1,4) .
string i_4ATC8(a30).
COMPUTE i_4ATC8 = CHAR.SUBSTR(imatc8,1,4) .
string i_4ATC9(a30).
COMPUTE i_4ATC9 = CHAR.SUBSTR(imatc9,1,4) .
string i_4ATC10(a30).
COMPUTE i_4ATC10 = CHAR.SUBSTR(imatc10,1,4) .
string i_4ATC11(a30).
COMPUTE i_4ATC11 = CHAR.SUBSTR(imatc11,1,4) .
string i_4ATC12(a30).
COMPUTE i_4ATC12 = CHAR.SUBSTR(imatc12,1,4) .
string i_4ATC13(a30).
COMPUTE i_4ATC13 = CHAR.SUBSTR(imatc13,1,4) .
string i_4ATC14(a30).
COMPUTE i_4ATC14 = CHAR.SUBSTR(imatc14,1,4) .
string i_4ATC15(a30).
COMPUTE i_4ATC15 = CHAR.SUBSTR(imatc15,1,4) .
string i_4ATC16(a30).
COMPUTE i_4ATC16 = CHAR.SUBSTR(imatc16,1,4) .
string i_4ATC17(a30).
COMPUTE i_4ATC17 = CHAR.SUBSTR(imatc17,1,4) .
string i_4ATC18(a30).
COMPUTE i_4ATC18 = CHAR.SUBSTR(imatc18,1,4) .
string i_4ATC19(a30).
COMPUTE i_4ATC19 = CHAR.SUBSTR(imatc19,1,4) .
```

```
string i_4ATC20(a30).
COMPUTE i_4ATC20 = CHAR.SUBSTR(imatc20,1,4) .
string i_4ATC21(a30).
COMPUTE i_4ATC21 = CHAR.SUBSTR(imatc21,1,4) .
string i_4ATC22(a30).
COMPUTE i_4ATC22 = CHAR.SUBSTR(imatc22,1,4) .
string i_4ATC23(a30).
COMPUTE i_4ATC23 = CHAR.SUBSTR(imatc23,1,4) .
string i_4ATC24(a30).
COMPUTE i_4ATC24 = CHAR.SUBSTR(imatc24,1,4) .
EXECUTE.

*create a string variable that consists of the first 5 characters of the ATC code.
string i_5ATC1(a30).
COMPUTE i_5ATC1 = CHAR.SUBSTR(imatc1,1,5) .
string i_5ATC2(a30).
COMPUTE i_5ATC2 = CHAR.SUBSTR(imatc2,1,5) .
string i_5ATC3(a30).
COMPUTE i_5ATC3 = CHAR.SUBSTR(imatc3,1,5) .
string i_5ATC4(a30).
COMPUTE i_5ATC4 = CHAR.SUBSTR(imatc4,1,5) .
string i_5ATC5(a30).
COMPUTE i_5ATC5 = CHAR.SUBSTR(imatc5,1,5) .
string i_5ATC6(a30).
COMPUTE i_5ATC6 = CHAR.SUBSTR(imatc6,1,5) .
string i_5ATC7(a30).
COMPUTE i_5ATC7 = CHAR.SUBSTR(imatc7,1,5) .
string i_5ATC8(a30).
COMPUTE i_5ATC8 = CHAR.SUBSTR(imatc8,1,5) .
string i_5ATC9(a30).
COMPUTE i_5ATC9 = CHAR.SUBSTR(imatc9,1,5) .
string i_5ATC10(a30).
COMPUTE i_5ATC10 = CHAR.SUBSTR(imatc10,1,5) .
string i_5ATC11(a30).
COMPUTE i_5ATC11 = CHAR.SUBSTR(imatc11,1,5) .
string i_5ATC12(a30).
COMPUTE i_5ATC12 = CHAR.SUBSTR(imatc12,1,5) .
string i_5ATC13(a30).
COMPUTE i_5ATC13 = CHAR.SUBSTR(imatc13,1,5) .
string i_5ATC14(a30).
COMPUTE i_5ATC14 = CHAR.SUBSTR(imatc14,1,5) .
string i_5ATC15(a30).
COMPUTE i_5ATC15 = CHAR.SUBSTR(imatc15,1,5) .
string i_5ATC16(a30).
COMPUTE i_5ATC16 = CHAR.SUBSTR(imatc16,1,5) .
string i_5ATC17(a30).
COMPUTE i_5ATC17 = CHAR.SUBSTR(imatc17,1,5) .
string i_5ATC18(a30).
COMPUTE i_5ATC18 = CHAR.SUBSTR(imatc18,1,5) .
string i_5ATC19(a30).
COMPUTE i_5ATC19 = CHAR.SUBSTR(imatc19,1,5) .
string i_5ATC20(a30).
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```
COMPUTE i_5ATC20 = CHAR.SUBSTR(imatc20,1,5) .
string i_5ATC21(a30).
COMPUTE i_5ATC21 = CHAR.SUBSTR(imatc21,1,5) .
string i_5ATC22(a30).
COMPUTE i_5ATC22 = CHAR.SUBSTR(imatc22,1,5) .
string i_5ATC23(a30).
COMPUTE i_5ATC23 = CHAR.SUBSTR(imatc23,1,5) .
string i_5ATC24(a30).
COMPUTE i_5ATC24 = CHAR.SUBSTR(imatc24,1,5) .
EXECUTE.

*create a variable: use of beta blocking agents (atc code C07, thus includes combination preparaten)
yes/no.
compute imed_beta=0.
If (imvar13 le -1) imed_beta=-1.
If (i_3ATC1='C07' OR i_3ATC2='C07' OR i_3ATC3='C07' OR i_3ATC4='C07' OR i_3ATC5='C07' OR
i_3ATC6='C07' OR
i_3ATC7='C07' OR i_3ATC8='C07' OR i_3ATC9='C07' OR i_3ATC10='C07' OR i_3ATC11='C07' OR
i_3ATC12='C07' OR i_3ATC13='C07' OR
i_3ATC14='C07' OR i_3ATC15='C07' OR i_3ATC16='C07' OR i_3ATC17='C07' OR i_3ATC18='C07' OR
i_3ATC19='C07' OR i_3ATC20='C07'  OR
i_3ATC21='C07' OR i_3ATC22='C07' OR i_3ATC23='C07' OR i_3ATC24='C07') imed_beta=1.
VARIABLE LABELS imed_beta 'use of beta blocking agents'.
VALUE LABELS   imed_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*create a variable: use of anticoagulant drugs (vitamine K antagonists, DOACs, dabigatran (atc codes
B01AA, B01AF, B01AE)) yes/no.
compute imed_stolling=0.
If (imvar13 le -1) imed_stolling=-1.
If (i_5ATC1='B01AA' OR i_5ATC2='B01AA' OR i_5ATC3='B01AA' OR i_5ATC4='B01AA' OR
i_5ATC5='B01AA' OR i_5ATC6='B01AA' OR
i_5ATC7='B01AA' OR i_5ATC8='B01AA' OR i_5ATC9='B01AA' OR i_5ATC10='B01AA' OR
i_5ATC11='B01AA' OR i_5ATC12='B01AA' OR i_5ATC13='B01AA' OR
i_5ATC14='B01AA' OR i_5ATC15='B01AA' OR i_5ATC16='B01AA' OR i_5ATC17='B01AA' OR
i_5ATC18='B01AA' OR i_5ATC19='B01AA' OR i_5ATC20='B01AA' OR
i_5ATC21='B01AA' OR i_5ATC22='B01AA' OR i_5ATC23='B01AA' OR i_5ATC24='B01AA')
imed_stolling=1.
If (i_5ATC1='B01AF' OR i_5ATC2='B01AF' OR i_5ATC3='B01AF' OR i_5ATC4='B01AF' OR
i_5ATC5='B01AF' OR i_5ATC6='B01AF' OR
i_5ATC7='B01AF' OR i_5ATC8='B01AF' OR i_5ATC9='B01AF' OR i_5ATC10='B01AF' OR
i_5ATC11='B01AF' OR i_5ATC12='B01AF' OR i_5ATC13='B01AF' OR
i_5ATC14='B01AF' OR i_5ATC15='B01AF' OR i_5ATC16='B01AF' OR i_5ATC17='B01AF' OR
i_5ATC18='B01AF' OR i_5ATC19='B01AF' OR i_5ATC20='B01AF' OR
i_5ATC21='B01AF' OR i_5ATC22='B01AF' OR i_5ATC23='B01AF' OR i_5ATC24='B01AF')
imed_stolling=1.
If (i_5ATC1='B01AE' OR i_5ATC2='B01AE' OR i_5ATC3='B01AE' OR i_5ATC4='B01AE' OR
i_5ATC5='B01AE' OR i_5ATC6='B01AE' OR
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i_5ATC7='B01AE' OR i_5ATC8='B01AE' OR i_5ATC9='B01AE' OR i_5ATC10='B01AE' OR
i_5ATC11='B01AE' OR i_5ATC12='B01AE' OR i_5ATC13='B01AE' OR
i_5ATC14='B01AE' OR i_5ATC15='B01AE' OR i_5ATC16='B01AE' OR i_5ATC17='B01AE' OR
i_5ATC18='B01AE' OR i_5ATC19='B01AE' OR i_5ATC20='B01AE' OR
i_5ATC21='B01AE' OR i_5ATC22='B01AE' OR i_5ATC23='B01AE' OR i_5ATC24='B01AE')
imed_stolling=1.
VARIABLE LABELS imed_stolling 'use of anticoagulants'.
VALUE LABELS imed_stolling
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*combining anticoagulants and betablocking agents: use of both, yes/no.
compute imed_stol_beta=-3.
If (imed_stolling=-1) imed_stol_beta=-1.
If (imed_stolling=1 and imed_beta=1) imed_stol_beta=1.
If (imed_stolling=0 or imed_beta=0) imed_stol_beta=0.
VARIABLE LABELS imed_stol_beta 'use of both beta blocking agent AND anticoagulantia'.
VALUE LABELS imed_stol_beta
        -1 'missing'
        0 'no'
        1 'yes'.
EXECUTE.

*some diuretics are combination preps and therefore (incorrectly) not included in the diuretics
variable.
*C07B C07C C07D C02L C09B C09D C08G
C09AX C09CX C01AA.

*C07B C07C C07D C02L C09B C09D C08G .
If (i_4ATC1='C07B' OR i_4ATC2='C07B' OR i_4ATC3='C07B' OR i_4ATC4='C07B' OR i_4ATC5='C07B' OR
i_4ATC6='C07B' OR
i_4ATC7='C07B' OR i_4ATC8='C07B' OR i_4ATC9='C07B' OR i_4ATC10='C07B' OR i_4ATC11='C07B' OR
i_4ATC12='C07B' OR i_4ATC13='C07B' OR
i_4ATC14='C07B' OR i_4ATC15='C07B' OR i_4ATC16='C07B' OR i_4ATC17='C07B' OR i_4ATC18='C07B'
OR i_4ATC19='C07B' OR i_4ATC20='C07B' OR
i_4ATC21='C07B' OR i_4ATC22='C07B' OR i_4ATC23='C07B' OR i_4ATC24='C07B') imed_diu=1.
If (i_4ATC1='C07C' OR i_4ATC2='C07C' OR i_4ATC3='C07C' OR i_4ATC4='C07C' OR i_4ATC5='C07C' OR
i_4ATC6='C07C' OR
i_4ATC7='C07C' OR i_4ATC8='C07C' OR i_4ATC9='C07C' OR i_4ATC10='C07C' OR i_4ATC11='C07C' OR
i_4ATC12='C07C' OR i_4ATC13='C07C' OR
i_4ATC14='C07C' OR i_4ATC15='C07C' OR i_4ATC16='C07C' OR i_4ATC17='C07C' OR i_4ATC18='C07C'
OR i_4ATC19='C07C' OR i_4ATC20='C07C' OR
i_4ATC21='C07C' OR i_4ATC22='C07C' OR i_4ATC23='C07C' OR i_4ATC24='C07C') imed_diu=1.
If (i_4ATC1='C07D' OR i_4ATC2='C07D' OR i_4ATC3='C07D' OR i_4ATC4='C07D' OR i_4ATC5='C07D'
OR i_4ATC6='C07D' OR
i_4ATC7='C07D' OR i_4ATC8='C07D' OR i_4ATC9='C07D' OR i_4ATC10='C07D' OR i_4ATC11='C07D'
OR i_4ATC12='C07D' OR i_4ATC13='C07D' OR
i_4ATC14='C07D' OR i_4ATC15='C07D' OR i_4ATC16='C07D' OR i_4ATC17='C07D' OR
i_4ATC18='C07D' OR i_4ATC19='C07D' OR i_4ATC20='C07D' OR
i_4ATC21='C07D' OR i_4ATC22='C07D' OR i_4ATC23='C07D' OR i_4ATC24='C07D') imed_diu=1.

If (i_4ATC1='C02L' OR i_4ATC2='C02L' OR i_4ATC3='C02L' OR i_4ATC4='C02L' OR i_4ATC5='C02L' OR i_4ATC6='C02L' OR
i_4ATC7='C02L' OR i_4ATC8='C02L' OR i_4ATC9='C02L' OR i_4ATC10='C02L' OR i_4ATC11='C02L' OR i_4ATC12='C02L' OR i_4ATC13='C02L' OR
i_4ATC14='C02L' OR i_4ATC15='C02L' OR i_4ATC16='C02L' OR i_4ATC17='C02L' OR i_4ATC18='C02L' OR i_4ATC19='C02L' OR i_4ATC20='C02L' OR
i_4ATC21='C02L' OR i_4ATC22='C02L' OR i_4ATC23='C02L' OR i_4ATC24='C02L') imed_diu=1.
If (i_4ATC1='C09BA' OR i_4ATC2='C09BA' OR i_4ATC3='C09BA' OR i_4ATC4='C09BA' OR i_4ATC5='C09BA' OR i_4ATC6='C09BA' OR
i_4ATC7='C09BA' OR i_4ATC8='C09BA' OR i_4ATC9='C09BA' OR i_4ATC10='C09BA' OR i_4ATC11='C09BA' OR i_4ATC12='C09BA' OR i_4ATC13='C09BA' OR
i_4ATC14='C09BA' OR i_4ATC15='C09BA' OR i_4ATC16='C09BA' OR i_4ATC17='C09BA' OR i_4ATC18='C09BA' OR i_4ATC19='C09BA' OR i_4ATC20='C09BA' OR
i_4ATC21='C09BA' OR i_4ATC22='C09BA' OR i_4ATC23='C09BA' OR i_4ATC24='C09BA') imed_diu=1.
If (i_4ATC1='C09DA' OR i_4ATC2='C09DA' OR i_4ATC3='C09DA' OR i_4ATC4='C09DA' OR
i_4ATC5='C09DA' OR i_4ATC6='C09DA' OR
i_4ATC7='C09DA' OR i_4ATC8='C09DA' OR i_4ATC9='C09DA' OR i_4ATC10='C09DA' OR
i_4ATC11='C09DA' OR i_4ATC12='C09DA' OR i_4ATC13='C09DA' OR
i_4ATC14='C09DA' OR i_4ATC15='C09DA' OR i_4ATC16='C09DA' OR i_4ATC17='C09DA' OR
i_4ATC18='C09DA' OR i_4ATC19='C09DA' OR i_4ATC20='C09DA' OR
i_4ATC21='C09DA' OR i_4ATC22='C09DA' OR i_4ATC23='C09DA' OR i_4ATC24='C09DA') imed_diu=1.
If (i_4ATC1='C08G' OR i_4ATC2='C08G' OR i_4ATC3='C08G' OR i_4ATC4='C08G' OR i_4ATC5='C08G' OR i_4ATC6='C08G' OR
i_4ATC7='C08G' OR i_4ATC8='C08G' OR i_4ATC9='C08G' OR i_4ATC10='C08G' OR i_4ATC11='C08G' OR i_4ATC12='C08G' OR i_4ATC13='C08G' OR
i_4ATC14='C08G' OR i_4ATC15='C08G' OR i_4ATC16='C08G' OR i_4ATC17='C08G' OR
i_4ATC18='C08G' OR i_4ATC19='C08G' OR i_4ATC20='C08G' OR
i_4ATC21='C08G' OR i_4ATC22='C08G' OR i_4ATC23='C08G' OR i_4ATC24='C08G') imed_diu=1.
EXECUTE.

*C09AX C09CX C01AA.
If (i_5ATC1='C09AX' OR i_5ATC2='C09AX' OR i_5ATC3='C09AX' OR i_5ATC4='C09AX' OR
i_5ATC5='C09AX' OR i_5ATC6='C09AX' OR
i_5ATC7='C09AX' OR i_5ATC8='C09AX' OR i_5ATC9='C09AX' OR i_5ATC10='C09AX' OR
i_5ATC11='C09AX' OR i_5ATC12='C09AX' OR i_5ATC13='C09AX' OR
i_5ATC14='C09AX' OR i_5ATC15='C09AX' OR i_5ATC16='C09AX' OR i_5ATC17='C09AX' OR
i_5ATC18='C09AX' OR i_5ATC19='C09AX' OR i_5ATC20='C09AX' OR
i_5ATC21='C09AX' OR i_5ATC22='C09AX' OR i_5ATC23='C09AX' OR i_5ATC24='C09AX') imed_diu=1.
If (i_5ATC1='C09CX' OR i_5ATC2='C09CX' OR i_5ATC3='C09CX' OR i_5ATC4='C09CX' OR
i_5ATC5='C09CX' OR i_5ATC6='C09CX' OR
i_5ATC7='C09CX' OR i_5ATC8='C09CX' OR i_5ATC9='C09CX' OR i_5ATC10='C09CX' OR
i_5ATC11='C09CX' OR i_5ATC12='C09CX' OR i_5ATC13='C09CX' OR
i_5ATC14='C09CX' OR i_5ATC15='C09CX' OR i_5ATC16='C09CX' OR i_5ATC17='C09CX' OR
i_5ATC18='C09CX' OR i_5ATC19='C09CX' OR i_5ATC20='C09CX' OR
i_5ATC21='C09CX' OR i_5ATC22='C09CX' OR i_5ATC23='C09CX' OR i_5ATC24='C09CX') imed_diu=1.
If (i_5ATC1='C01AA' OR i_5ATC2='C01AA' OR i_5ATC3='C01AA' OR i_5ATC4='C01AA' OR
i_5ATC5='C01AA' OR i_5ATC6='C01AA' OR
i_5ATC7='C01AA' OR i_5ATC8='C01AA' OR i_5ATC9='C01AA' OR i_5ATC10='C01AA' OR
i_5ATC11='C01AA' OR i_5ATC12='C01AA' OR i_5ATC13='C01AA' OR
i_5ATC14='C01AA' OR i_5ATC15='C01AA' OR i_5ATC16='C01AA' OR i_5ATC17='C01AA' OR
i_5ATC18='C01AA' OR i_5ATC19='C01AA' OR i_5ATC20='C01AA' OR
i_5ATC21='C01AA' OR i_5ATC22='C01AA' OR i_5ATC23='C01AA' OR i_5ATC24='C01AA') imed_diu=1.

EXECUTE.

********************year of interview (2015 or 2016).
COMPUTE t9_year=XDATE.YEAR(t9_dat).
VARIABLE LABELS t9_year "LASA main interview year (w9)".
VARIABLE LEVEL t9_year(SCALE).
FORMATS t9_year(F8.0).
VARIABLE WIDTH t9_year(8).
EXECUTE.

********************ARRHYTHMIA (ARI) at I********************.
*Selfreport surgery implantation of pacemaker.
COMPUTE i_surARI=-3.
IF (ihart15d le -1) i_surARI=-1.
IF (ihart01 le -1) i_surARI=-1.
IF (ihart15 le -1) i_surARI=-1.
IF (ihart01=0 or ihart01=1) i_surARI=0.
IF (ihart15d=0) i_surARI=0.
IF (ihart15=1) i_surARI=0.
IF (ihart15d=1) i_surARI=1.
VARIABLE LABELS i_surARI 'self report surgery: pacemaker'.
VALUE LABELS i_surARI
        -1 'missing'
        0 'no'
        1 'yes'.

*use of anti arrythmic medication.
RECODE imed_ARI (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO i_mARI.
IF (imed_ino=1) i_mARI=1.
IF (imvar13=1) i_mARI=0.
IF (imvar13 le -1) i_mARI=-1.
VARIABLE LABELS i_mARI 'use of antiarrhythmics'.
VALUE LABELS i_mARI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of ARI.
COMPUTE i_gpARI=-3.
IF (hgarrth le -1) i_gpARI=-1.
IF (t9_year le -1) i_gpARI=-1.
IF (hgarrth=0) i_gpARI=0.
IF (hgarrth=1 and hgarrthy ge 9) i_gpARI=0.
IF (hgarrth=1 and hgarrthy ge 8 and t9_year=2015) i_gpARI=0.
IF (hgarrth=1 and (hgarrthy ge 1 and hgarrthy le 7)) i_gpARI=1.
IF (hgarrth=1 and (hgarrthy=8 and t9_YEAR=2016)) i_gpARI=1.
IF (hgarrth=1 and hgarrthy le -1) i_gpARI=2.
IF (hgarrth=1 and hgarrthy=1) i_gpARI=1.
IF (fgarrth=1) i_gpARI=1.
IF (egarrth=1) i_gpARI=1.
IF (cgarrth=1) i_gpARI=1.

VARIABLE LABELS i_gpARI 'gp diagnosis: cardiac arrhythmia'.
VALUE LABELS i_gpARI
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*ARI algorithm: medication, GP diagnosis and SR implantation of pacemaker combined.
compute i_alg_ARI=-3.
IF (i_mARI=1) i_alg_ARI=1.
IF (i_mARI=0 and i_gpARI=1 and (imed_stol_beta=1)) i_alg_ARI=1.
IF (i_mARI=0 and i_gpARI=1 and (imed_stol_beta=0) and (hgarrths=1 or cgarrths=1 or egarrths=1 or fgarrths=1)) i_alg_ARI=1.
IF (i_mARI=0 and i_gpARI=1 and (imed_stol_beta=0) and hgarrths le 0 and i_surARI=1) i_alg_ARI=1.
IF (i_mARI=0 and i_gpARI=1 and (imed_stol_beta=0) and hgarrths le 0 and i_surARI le 0) i_alg_ARI=2.
IF (i_mARI=0 and i_gpARI=0 and i_surARI=1) i_alg_ARI=3.
IF (i_mARI=0 and i_gpARI=0 and i_surARI le 0) i_alg_ARI=0.
IF (i_mARI=0 and i_gpARI=2 and (imed_stol_beta=1)) i_alg_ARI=1.
IF (i_mARI=0 and i_gpARI=2 and (imed_stol_beta=0) and i_surARI=1) i_alg_ARI=1.
IF (i_mARI=0 and i_gpARI=2 and (imed_stol_beta=0) and i_surARI le 0) i_alg_ARI=0.
IF (i_mARI=0 and i_gpARI=2 and (imed_stol_beta=0) and i_surARI le -1) i_alg_ARI=0.
IF (i_mARI=0 and i_gpARI=-1 and i_surARI=1) i_alg_ARI=2.
IF (i_mARI=0 and i_gpARI=-1 and (imed_stol_beta=0) and i_surARI=0) i_alg_ARI=0.
IF (i_mARI=0 and i_gpARI=-1 and (imed_stol_beta=0) and i_surARI le -1) i_alg_ARI=-1.
IF (i_mARI=0 and i_gpARI=-1 and (imed_stol_beta=1) and i_surARI le 0) i_alg_ARI=-1.
IF (i_mARI le -1 and i_gpARI=1 and (hgarrths=1 or cgarrths=1 or egarrths=1 or fgarrths=1)) i_alg_ARI=1.
IF (i_mARI le -1 and i_gpARI=1 and hgarrths le 0 and i_surARI=1) i_alg_ARI=1.
IF (i_mARI le -1 and i_gpARI=1 and hgarrths le 0 and i_surARI le 0) i_alg_ARI=2.
IF (i_mARI le -1 and i_gpARI=0 and i_surARI=1) i_alg_ARI=3.
IF (i_mARI le -1 and i_gpARI=0 and i_surARI le 0) i_alg_ARI=0.
IF (i_mARI le -1 and i_gpARI=2 and i_surARI=1) i_alg_ARI=1.
IF (i_mARI le -1 and i_gpARI=2 and i_surARI le 0) i_alg_ARI=-1.
IF (i_mARI le -1 and i_gpARI le -1 and i_surARI=1) i_alg_ARI=2.
IF (i_mARI le -1 and i_gpARI le -1 and i_surARI le 0) i_alg_ARI=-1.
IF (i_alg_ARI=-1 and (itrhart1=0 or itphart1=0)) i_alg_ARI=0.
VARIABLE LABELS i_alg_ARI 'I wave: arrythmia'.
VALUE LABELS i_alg_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************CEREBROVASCULAR ACCIDENT (CVA) at I*********************.
*Selfreport diagnosis of CVA.
COMPUTE i_srCVA=-3.
IF (icva01=2 or icva01=3) i_srCVA=1.
IF (icva01=0 or icva01=1) i_srCVA=0.
IF (itpcva01=1) i_srCVA=1.
IF (itpcva01=0) i_srCVA=0.
IF (itrcva01=1) i_srCVA=1.

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IF (itrcva01=0) i_srCVA=0.
IF (icva01 le -1 and itpcva01 le -1 and itrcva01 le -1) i_srCVA=-1.
VARIABLE LABELS i_srCVA 'self report: CVA'.
VALUE LABELS i_srCVA
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CVA.
COMPUTE i_gpCVA=-3.
IF (hgcva le -1) i_gpCVA=-1.
IF (t9_year le -1) i_gpCVA=-1.
IF (hgcva=0) i_gpCVA=0.
IF (hgcva=1 and hgcvay ge 9) i_gpCVA=0.
IF (hgcva=1 and hgcvay ge 8 and t9_year=2015) i_gpCVA=0.
IF (hgcva=1 and (hgcvay ge 1 and hgcvay le 7)) i_gpCVA=1.
IF (hgcva=1 and (hgcvay=8 and t9_YEAR=2016)) i_gpCVA=1.
IF (hgcva=1 and hgcvay le -1) i_gpCVA=2.
IF (hgcva=1 and hgcvay=1) i_gpCVA=1.
IF (fgcva=1) i_gpCVA=1.
IF (egcva=1) i_gpCVA=1.
IF (cgcva=1) i_gpCVA=1.
IF (bgcva=1) i_gpCVA=1.
VARIABLE LABELS i_gpCVA 'gp diagnosis: CVA'.
VALUE LABELS i_gpCVA
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CVA algorithm: GP diagnosis and SR combined.
COMPUTE i_alg_CVA=-3.
IF (i_gpCVA=1 and (hgcvas=1 or cgcvas=1 or egcvas=1 or fgcvas=1)) i_alg_CVA=1.
IF (i_gpCVA=1 and hgcvas le 0 and i_srCVA=1) i_alg_CVA=1.
IF (i_gpCVA=1 and hgcvas le 0 and i_srCVA=0) i_alg_CVA=3.
IF (i_gpCVA=1 and hgcvas le 0 and i_srCVA le -1) i_alg_CVA=2.
IF (i_gpCVA=0 and i_srCVA=1) i_alg_CVA=3.
IF (i_gpCVA=0 and i_srCVA=0) i_alg_CVA=0.
IF (i_gpCVA=0 and i_srCVA le -1) i_alg_CVA=0.
IF (i_gpCVA=2 and i_srCVA=1) i_alg_CVA=1.
IF (i_gpCVA=2 and i_srCVA=0) i_alg_CVA=0.
IF (i_gpCVA=2 and i_srCVA le -1) i_alg_CVA=-1.
IF (i_gpCVA le -1 and i_srCVA=1) i_alg_CVA=2.
IF (i_gpCVA le -1 and i_srCVA=0) i_alg_CVA=0.
IF (i_gpCVA le -1 and i_srCVA le -1) i_alg_CVA=-1.
VARIABLE LABELS i_alg_CVA 'I wave: cerebrovascular accident'.
VALUE LABELS i_alg_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
```

3 'contradictory'.

********************MYOCARDIAL INFARCTION (MI) at I********************.
*Selfreport diagnosis of MI.
COMPUTE i_srMI=-5.
IF (ihart01 le -1) i_srMI=-1.
IF ((ihart01=2 or ihart01=3) and ihart05 le -1) i_srMI=-1.
IF (ihart05=1) i_srMI=0.
IF (ihart01=0 or ihart01=1) i_srMI=0.
IF (ihart05=2) i_srMI=1.
IF (itphart1=0 or itrhart1=0) i_srMI=0.
VARIABLE LABELS i_srMI 'self report: myocardial infarction'.
VALUE LABELS i_srMI
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of MI.
COMPUTE i_gpmi=-3.
IF (hgmiy le -1) i_gpMI=-1.
IF (t9_year le -1) i_gpMI=-1.
IF (hgmi=0) i_gpMI=0.
IF (hgmi=1 and hgmiy ge 9) i_gpMI=0.
IF (hgmi=1 and hgmiy ge 8 and t9_year=2015) i_gpMI=0.
IF (hgmi=1 and (hgmiy ge 1 and hgmiy le 7)) i_gpMI=1.
IF (hgmi=1 and (hgmiy=8 and t9_YEAR=2016)) i_gpMI=1.
IF (hgmi=1 and hgmiy le -1) i_gpMI=2.
IF (hgmi=1 and hgmiy=1) i_gpMI=1.
IF (fgmi=1) i_gpMI=1.
IF (egmi=1) i_gpMI=1.
IF (cgmi=1) i_gpMI=1.
VARIABLE LABELS i_gpMI 'gp diagnosis: MI'.
VALUE LABELS i_gpMI
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*MI algorithm: GP diagnosis and SR combined.
COMPUTE i_alg_MI=-3.
IF (i_gpMI=1 and (hgmis=1 or cgmis=1 or egmis=1 or fgmis=1)) i_alg_MI=1.
IF (i_gpMI=1 and hgmis le 0 and i_srMI=1) i_alg_MI=1.
IF (i_gpMI=1 and hgmis le 0 and i_srMI=0) i_alg_MI=3.
IF (i_gpMI=1 and hgmis le 0 and i_srMI le -1) i_alg_MI=2.
IF (i_gpMI=0 and i_srMI=1) i_alg_MI=3.
IF (i_gpMI=0 and i_srMI=0) i_alg_MI=0.
IF (i_gpMI=0 and i_srMI le -1) i_alg_MI=0.
IF (i_gpMI=2 and i_srMI=1) i_alg_MI=1.
IF (i_gpMI=2 and i_srMI=0) i_alg_MI=0.
IF (i_gpMI=2 and i_srMI le -1) i_alg_MI=-1.

IF (i_gpMI le -1 and i_srMI=1) i_alg_MI=2.
IF (i_gpMI le -1 and i_srMI=0) i_alg_MI=0.
IF (i_gpMI le -1 and i_srMI le -1) i_alg_MI=-1.
VARIABLE LABELS i_alg_MI 'I wave: myocardial infarction'.
VALUE LABELS i_alg_MI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

**********************ANGINA PECTORIS (AP) at I********************.
*Selfreport diagnosis of AP.
COMPUTE i_srAP=-5.
IF (ihart01 le -1) i_srAP=-1.
IF ((ihart01=2 or ihart01=3) and ihart10 le -1) i_srAP=-1.
IF (ihart01=0 or ihart01=1) i_srAP=0.
IF (ihart11=1 or idiabe12=1) i_srAP=0.
if (((ihart01=2 or ihart01=3) and ihart10=1) OR ((idiabe01=2 or idiabe01=3) and idiabe11=1))
i_srAP=0.
IF (((ihart01=2 or ihart01=3) and ihart10 ge 4) OR ((idiabe01=2 or idiabe01=3) and idiabe11 ge 4))
i_srAP=0.
IF (((ihart01=2 or ihart01=3) and ihart10=2 and ihart11 le -1) OR ((idiabe01=2 or idiabe01=3) and
idiabe11=2 and idiabe12 le -1)) i_srAP=2.
IF (ihart11=2 or idiabe12=2) i_srAP=1.
IF (ihart10=3 or idiabe11=3) i_srAP=1.
IF (itphart1=0 or itrhart1=0) i_srAP=0.
VARIABLE LABELS i_srAP 'self report: angina pectoris'.
VALUE LABELS i_srAP
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of AP.
COMPUTE i_gpAP=-3.
IF (hgap le -1) i_gpAP=-1.
IF (t9_year le -1) i_gpAP=-1.
IF (hgap=0) i_gpAP=0.
IF (hgap=1 and hgapy ge 9) i_gpAP=0.
IF (hgap=1 and hgapy ge 8 and t9_year=2015) i_gpAP=0.
IF (hgap=1 and (hgapy ge 1 and hgapy le 7)) i_gpAP=1.
IF (hgap=1 and (hgapy=8 and t9_YEAR=2016)) i_gpAP=1.
IF (hgap=1 and hgapy le -1) i_gpAP=2.
IF (hgap=1 and hgapy=1) i_gpAP=1.
IF (fgap=1) i_gpAP=1.
IF (egap=1) i_gpAP=1.
IF (cgap=1) i_gpAP=1.
VARIABLE LABELS i_gpAP 'gp diagnosis: angina pectoris'.
VALUE LABELS i_gpAP
        -2 'dropout'

-1 'missing'
         0 'no'
         1 'yes'
         2 'diagnose = yes, but year = missing'.

*use of AP medication: nitrates.
RECODE imed_ang (0=0) (1=1) (SYSMIS=-1) (-9=-1) (ELSE=copy) INTO i_mAP.
IF (imvar13 le -1) i_mAP=-1.
IF (imvar13=1) i_mAP=0.
VARIABLE LABELS i_mAP 'use of nitrates'.
VALUE LABELS i_mAP
         -1 'missing'
         0 'no'
         1 'yes'.

*AP algorithm: medication, GP diagnosis and SR combined.
COMPUTE i_alg_AP=-3.
IF (i_mAP=1) i_alg_AP=1.
IF (i_mAP le 0 and i_srAP=1 and i_gpAP=1) i_alg_AP=1.
IF (i_mAP le 0 and i_srAP=1 and i_gpAP=0) i_alg_AP=3.
IF (i_mAP le 0 and i_srAP=1 and i_gpap=2) i_alg_AP=1.
IF (i_mAP le 0 and i_srAP=1 and i_gpAP le -1) i_alg_AP=2.
IF (i_mAP le 0 and i_srAP=0 and i_gpAP=1 and (hgaps=1 or cgaps=1 or egaps=1 or fgaps=1))
i_alg_AP=1.
IF (i_mAP le 0 and i_srAP=0 and i_gpAP=1 and hgaps le 0) i_alg_AP=3.
IF (i_mAP le 0 and i_srAP=0 and i_gpAP=0) i_alg_AP=0.
IF (i_mAP le 0 and i_srAP=0 and i_gpap=2) i_alg_AP=0.
IF (i_mAP le 0 and i_srAP=0 and i_gpAP le -1) i_alg_AP=0.
IF (i_mAP le 0 and i_srAP=2 and i_gpAP=1) i_alg_AP=1.
IF (i_mAP le 0 and i_srAP=2 and i_gpAP=0) i_alg_AP=0.
IF (i_mAP le 0 and i_srAP=2 and i_gpAP=2) i_alg_AP=-1.
IF (i_mAP le 0 and i_srAP=2 and i_gpap=-1) i_alg_AP=-1.
IF (i_mAP le 0 and i_srAP le -1 and i_gpAP=1 and (hgaps=1 or cgaps=1 or egaps=1 or fgaps=1))
i_alg_AP=1.
IF (i_mAP le 0 and i_srAP le -1 and i_gpAP=1 and hgaps le 0) i_alg_AP=2.
IF (i_mAP le 0 and i_srAP le -1 and i_gpAP=0) i_alg_AP=0.
IF (i_mAP le 0 and i_srAP le -1 and i_gpap=2) i_alg_AP=-1.
IF (i_mAP le 0 and i_srAP le -1 and i_gpAP le -1) i_alg_AP=-1.
VARIABLE LABELS i_alg_AP 'I wave: angina pectoris'.
VALUE LABELS i_alg_AP
         -1 'missing'
         0 'no'
         1 'definite'
         2 'possible'
         3 'contradictory'.

********************CONGESTIVE HEART FAILURE (CHF) at I********************.
*Selfreport diagnosis of CHF.
COMPUTE i_srCHF=-3.
IF (ihart01 le -1) i_srCHF=-1.
IF ((ihart01=2 or ihart01=3) and ihart12 le -1) i_srCHF=-1.
IF (ihart01=0 or ihart01=1) i_srCHF=0.

IF ((ihart01=2 or ihart01=3) and ihart12=1) i_srCHF=0.
IF ((ihart01=2 or ihart01=3) and ihart12=2) i_srCHF=1.
IF (itphart1=0 or itrhart1=0) i_srCHF=0.
VARIABLE LABELS i_srCHF 'self reported diagnosis of congestive heart failure'.
VALUE LABELS i_srCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CHF.
COMPUTE i_gpCHF=-3.
IF (hgchf le -1) i_gpCHF=-1.
IF (t9_year le -1) i_gpCHF=-1.
IF (hgchf=0) i_gpCHF=0.
IF (hgchf=1 and hgchfy ge 9) i_gpCHF=0.
IF (hgchf=1 and hgchfy ge 8 and t9_year=2015) i_gpCHF=0.
IF (hgchf=1 and (hgchfy ge 1 and hgchfy le 7)) i_gpCHF=1.
IF (hgchf=1 and (hgchfy=8 and t9_YEAR=2016)) i_gpCHF=1.
IF (hgchf=1 and hgchfy le -1) i_gpCHF=2.
IF (hgchf=1 and hgchfy=1) i_gpCHF=1.
IF (fgchf=1) i_gpCHF=1.
IF (egchf=1) i_gpCHF=1.
IF (cgchf=1) i_gpCHF=1.
VARIABLE LABELS i_gpCHF 'gp diagnosis: congestive heart failure'.
VALUE LABELS i_gpCHF
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CHF medication: diuretics, antihypertensives, nitrates, inotropics, beta blocking agents.
compute i_mCHF=0.
if (imed_diu=1 and (imed_hyp=1 or imed_ang=1 or imed_ino=1 or imed_beta=1)) i_mCHF=1.
IF (imvar13 le -1) i_mCHF=-1.
IF (imvar13=1) i_mCHF=0.
VARIABLE LABELS i_mCHF 'medication for congestive heart failure'.
VALUE LABELS i_mCHF
        -1 'missing'
        0 'no'
        1 'yes'.

*CHF algorithm: medication, GP diagnosis and SR combined.
COMPUTE i_alg_CHF=-3.
IF (i_gpCHF=1 and (hgchfs=1 or cgchfs=1 or egchfs=1 or fgchfs=1)) i_alg_CHF=1.
IF (i_gpCHF=1 and hgchfs le 0 and i_srCHF=1) i_alg_CHF=1.
IF (i_gpCHF=1 and hgchfs le 0 and i_srCHF le 0 and i_mCHF=1) i_alg_CHF=1.
IF (i_gpCHF=1 and hgchfs le 0 and i_srCHF=0 and i_mCHF=0) i_alg_CHF=2.
IF (i_gpCHF=1 and hgchfs le 0 and i_srCHF le 0 and i_mCHF le -1) i_alg_CHF=2.
IF (i_gpCHF=1 and hgchfs le 0 and i_srCHF le -1 and i_mCHF le 0) i_alg_CHF=2.
IF (i_gpCHF=0 and i_srCHF=1 and i_mCHF=1) i_alg_CHF=1.
IF (i_gpCHF=0 and i_srCHF=1 and i_mCHF le 0) i_alg_CHF=2.

IF (i_gpCHF=0 and i_srCHF le 0 and i_mCHF=1) i_alg_CHF=3.
IF (i_gpCHF=0 and i_srCHF le 0 and i_mCHF le 0) i_alg_CHF=0.
IF (i_gpCHF=2 and i_srCHF=1) i_alg_CHF=1.
IF (i_gpCHF=2 and i_srCHF le 0 and i_mCHF=1) i_alg_CHF=1.
IF (i_gpCHF=2 and i_srCHF le 0 and i_mCHF le 0) i_alg_CHF=0.
IF (i_gpCHF=2 and i_srCHF=0 and i_mCHF=-1) i_alg_CHF=-1.
IF (i_gpCHF=2 and i_srCHF le -1 and i_mCHF le -1) i_alg_CHF=-1.
IF (i_gpCHF le -1 and i_srCHF=1 and i_mCHF=1) i_alg_CHF=1.
IF (i_gpCHF le -1 and i_srCHF=1 and i_mCHF le 0) i_alg_CHF=2.
IF (i_gpCHF le -1 and i_srCHF=0 and i_mCHF=1) i_alg_CHF=2.
IF (i_gpCHF le -1 and i_srCHF=0 and i_mCHF le 0) i_alg_CHF=0.
IF (i_gpCHF le -1 and i_srCHF le -1 and i_mCHF=1) i_alg_CHF=2.
IF (i_gpCHF le -1 and i_srCHF le -1 and i_mCHF=0) i_alg_CHF=0.
IF (i_gpCHF le -1 and i_srCHF le -1 and i_mCHF le -1) i_alg_CHF=-1.
VARIABLE LABELS i_alg_CHF 'I wave: congestive heart failure'.
VALUE LABELS i_alg_CHF
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*********************PERIPHERAL ARTERIAL DISEASE (PAD) at I*********************.
*Selfreport diagnosis of PAD.
COMPUTE i_srPAD=-5.
IF (iartvei1 le -1) i_srPAD=-1.
IF ((iartvei1=2 or iartvei1=3) and iartvei5 le -1) i_srPAD=-1.
IF (iartvei1=0 or iartvei1=1) i_srPAD=0.
IF (iartvei7=1 or idiabe09=1) i_srPAD=0.
IF (iartvei5=1 or idiabe07=1) i_srPAD=0.
IF ((iartvei5=2 and iartvei7 le -1) or (idiabe07=2 and idiabe09 le -1)) i_srPAD=2.
IF (iartvei7=2 or idiabe09=2) i_srPAD=1.
IF (itpartv1=0 OR itrartv1=0) i_srPAD=0.
IF (itpartv1=1 OR itrartv1=1) i_srPAD=2.
IF (iartvei1 le -1 and itpartv1 le -1 and itrartv1 le -1) i_srPAD=-1.
VARIABLE LABELS i_srPAD 'self reported diagnosis of peripheral artery disease'.
VALUE LABELS i_srPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*Selfreport surgery.
COMPUTE i_surPAD=-3.
IF (iartvei1 le -1) i_surPAD=-1.
IF ((iartvei1=2 or iartvei1=3) and iartve8 le -1) i_surPAD=-1.
IF (iartve8=1) i_surPAD=0.
IF ((iartve8c=0 AND iartve8d=0) AND (iartve8b le 0)) i_surPAD=0.
IF (iartvei1=0 or iartvei1=1) i_surPAD=0.
IF ((iartve8c le 0 AND iartve8d le 0) AND (iartve8b=1)) i_surPAD=2.
IF (iartve8c=1 OR iartve8d=1) i_surPAD=1.
VARIABLE LABELS i_surPAD 'self reported surgery of peripheral arteries'.

VALUE LABELS i_surPAD
        -1 'missing'
        0 'no'
        1 'yes'
        2 'possible'.

*GP diagnosis of PAD.
COMPUTE i_gpPAD=-3.
IF (hgartvei le -1) i_gpPAD=-1.
IF (t9_year le -1) i_gpPAD=-1.
IF (hgartvei=0) i_gpPAD=0.
IF (hgartvei=1 and hgartvey ge 9) i_gpPAD=0.
IF (hgartvei=1 and hgartvey ge 8 and t9_year=2015) i_gpPAD=0.
IF (hgartvei=1 and (hgartvey ge 1 and hgartvey le 7)) i_gpPAD=1.
IF (hgartvei=1 and (hgartvey=8 and t9_YEAR=2016)) i_gpPAD=1.
IF (hgartvei=1 and hgartvey le -1) i_gpPAD=2.
IF (hgartvei=1 and hgartvey=1) i_gpPAD=1.
IF (fgartvei=1) i_gpPAD=1.
IF (egartvei=1) i_gpPAD=1.
IF (cgartvei=1) i_gpPAD=1.
IF (bgclan=1) i_gpPAD=1.
VARIABLE LABELS i_gpPAD 'gp diagnosis: PAD'.
VALUE LABELS i_gpPAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*PAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE i_alg_PAD=-3.
IF (i_surPAD=1) i_alg_PAD=1.
IF (i_surPAD le 0 and i_gpPAD=1 and (hgartves=1 or cgartves=1 or egartves=1 or fgartves=1))
i_alg_PAD=1.
IF (i_surPAD le 0 and i_gpPAD=1 and hgartves le 0 and i_srPAD=1) i_alg_PAD=1.
IF (i_surPAD le 0 and i_gpPAD=1 and hgartves le 0 and i_srPAD=0) i_alg_PAD=3.
IF (i_surPAD le 0 and i_gpPAD=1 and hgartves le 0 and i_srPAD le -1) i_alg_PAD=2.
IF (i_surPAD le 0 and i_gpPAD=1 and hgartves le 0 and i_srPAD=2) i_alg_PAD=1.
IF (i_surPAD le 0 and i_gpPAD=0 and i_srPAD=1) i_alg_PAD=3.
IF (i_surPAD le 0 and i_gpPAD=0 and i_srPAD=0) i_alg_PAD=0.
IF (i_surPAD le 0 and i_gpPAD=0 and i_srPAD le -1) i_alg_PAD=0.
IF (i_surPAD le 0 and i_gpPAD=0 and i_srPAD=2) i_alg_PAD=0.
IF (i_surPAD le 0 and i_gpPAD=2 and i_srPAD=1) i_alg_PAD=1.
IF (i_surPAD le 0 and i_gpPAD=2 and i_srPAD=0) i_alg_PAD=0.
IF (i_surPAD le 0 and i_gpPAD=2 and i_srPAD le -1) i_alg_PAD=-1.
IF (i_surPAD le 0 and i_gpPAD=2 and i_srPAD=2) i_alg_PAD=1.
IF (i_surPAD le 0 and i_gpPAD le -1 and i_srPAD=1) i_alg_PAD=2.
IF (i_surPAD le 0 and i_gpPAD le -1 and i_srPAD=0) i_alg_PAD=0.
IF (i_surPAD le 0 and i_gpPAD le -1 and i_srPAD le -1) i_alg_PAD=-1.
IF (i_surPAD le 0 and i_gpPAD le -1 and i_srPAD=2) i_alg_PAD=-1.
IF (i_surPAD=2 and i_gpPAD=1) i_alg_PAD=1.
IF (i_surPAD=2 and i_gpPAD=0 and i_srPAD=1) i_alg_PAD=1.

IF (i_surPAD=2 and i_gpPAD=0 and i_srPAD=0) i_alg_PAD=0.
IF (i_surPAD=2 and i_gpPAD=0 and i_srPAD le -1) i_alg_PAD=0.
IF (i_surPAD=2 and i_gpPAD=0 and i_srPAD=2) i_alg_PAD=3.
IF (i_surPAD=2 and i_gpPAD=2 and i_srPAD=1) i_alg_PAD=1.
IF (i_surPAD=2 and i_gpPAD le -1 and i_srPAD=1) i_alg_PAD=1.
IF (i_surPAD=2 and i_gpPAD le -1 and i_srPAD=0) i_alg_PAD=0.
IF (i_surPAD=2 and i_gpPAD le -1 and i_srPAD le -1) i_alg_PAD=-1.
IF (i_surPAD=2 and i_gpPAD le -1 and i_srPAD=2) i_alg_PAD=-1.
VARIABLE LABELS i_alg_PAD 'I wave algorithm: peripheral artery disease'.
VALUE LABELS i_alg_PAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

********************CORONARY ARTERY DISEASE (CAD) at I********************.
*CAD Selfreport surgery.
COMPUTE i_surCAD=-3.
IF ((ihart01=2 or ihart01=3) and ihart15 le -1) i_surCAD=-1.
IF (ihart01 le -1) i_surCAD=-1.
IF (ihart15b le -1 AND ihart15c le -1) i_surCAD=-1.
IF (ihart15b=0 AND ihart15c=0) i_surCAD=0.
IF (ihart15=1) i_surCAD=0.
IF (ihart01=0 or ihart01=1) i_surCAD=0.
IF (ihart15b=1 OR ihart15c=1) i_surCAD=1.
VARIABLE LABELS i_surCAD 'self reported surgery of coronary arteries'.
VALUE LABELS i_surCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*CAD selfreport (=Selfreport of AP or MI).
COMPUTE i_srCAD=-5.
IF (ihart01 le -1) i_srCAD=-1.
IF (i_srMI=0 AND i_srAP=2) i_srCAD=-1.
IF (i_srMI=0 AND i_srAP le -1) i_srCAD=-1.
IF (i_srMI le -1 AND i_srAP=0) i_srCAD=-1.
IF (i_srMI le -1 AND i_srAP=2) i_srCAD=-1.
IF (i_srMI le -1 AND i_srAP le -1) i_srCAD=-1.
IF (i_srMI=0 AND i_srAP=0) i_srCAD=0.
IF (ihart01=0 or ihart01=1) i_srCAD=0.
IF (i_srMI le -1 AND i_srAP=1) i_srCAD=1.
IF (i_srMI=1) i_srCAD=1.
IF (i_srAP=1) i_srCAD=1.
IF (itphart1=0 or itrhart1=0) i_srCAD=0.
VARIABLE LABELS i_srCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS i_srCAD
        -1 'missing'
        0 'no'
        1 'yes'.

*GP diagnosis of CAD (gp diagnosis of AP or MI).
COMPUTE i_gpCAD=-5.
IF (i_gpMI le -1 AND i_gpAP=0) i_gpCAD=-1.
IF (i_gpMI=0 AND i_gpAP le -1) i_gpCAD=-1.
IF (i_gpMI le -1 AND i_gpAP le -1) i_gpCAD=-1.
IF (i_gpMI=0 AND i_gpAP=0) i_gpCAD=0.
IF (i_gpMI=0 AND i_gpAP=2) i_gpCAD=2.
IF (i_gpMI le -1 AND i_gpAP=2) i_gpCAD=2.
IF (i_gpMI=2 AND i_gpAP=0) i_gpCAD=2.
IF (i_gpMI=2 AND i_gpAP=2) i_gpCAD=2.
IF (i_gpMI=2 AND i_gpAP le -1) i_gpCAD=2.
IF (i_gpMI=1) i_gpCAD=1.
IF (i_gpAP=1) i_gpCAD=1.
IF (t9_year le -1) i_gpCAD=-2.
VARIABLE LABELS i_gpCAD 'self report: myocardial infarction OR angina pectoris'.
VALUE LABELS i_gpCAD
        -2 'dropout'
        -1 'missing'
        0 'no'
        1 'yes'
        2 'diagnose = yes, but year = missing'.

*CAD algorithm: medication, GP diagnosis, SR and surgery combined.
COMPUTE i_alg_CAD=-3.
IF (i_mAP le 0 and i_surCAD le 0 and i_srMI le 0 and (i_srAP le 0 or i_srAP=2) and i_gpMI le 0)
i_alg_CAD=0.
IF (i_mAP le -1 and i_surCAD le -1 and i_srMI le -1 and i_srAP le -1 and i_gpAP le -1 and i_gpMI le -1)
i_alg_CAD=-1.
IF (i_mAP=0 and i_surCAD=0 and i_srMI=0 and i_srAP=0 and i_gpAP=0 and i_gpMI=0) i_alg_CAD=0.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_srAP=1 and (i_srMI le 0 and i_gpAP le 0 and i_gpMI le 0)))
i_alg_CAD=3.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_srMI=1 and (i_srAP le 0 and i_gpAP le 0 and i_gpMI le 0)))
i_alg_CAD=3.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpAP=1 and hgaps le 0 and (i_gpMI le 0 or i_gpMI=2) and
i_srAP le 0 and i_srMI le 0)) i_alg_CAD=3.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpMI=1 and hgmis le 0 and (i_gpAP le 0 or i_gpAP=2) and
i_srAP le 0 and i_srMI le 0)) i_alg_CAD=3.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_srAP=1 and (i_srMI le -1 and i_gpAP le -1 and i_gpMI le -1)))
i_alg_CAD=2.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_srMI=1 and (i_srAP le -1 and i_gpAP le -1 and i_gpMI le -1)))
i_alg_CAD=2.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpAP=1 and hgaps le 0 and i_gpMI le -1 and i_srAP le -1 and
i_srMI le -1)) i_alg_CAD=2.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpMI=1 and hgmis le 0 and i_gpAP le -1 and i_srAP le -1 and
i_srMI le -1)) i_alg_CAD=2.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpAP=2 and (i_gpMI le 0 or i_gpMI=2) and (i_srAP le 0 or
i_srAP=2) and i_srMI le 0)) i_alg_CAD=0.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpMI=2 and (i_gpAP le 0 or i_gpAP=2) and (i_srAP le 0 or
i_srAP=2) and i_srMI le 0)) i_alg_CAD=0.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpAP=2 and (i_gpMI le -1 or i_gpMI=2) and (i_srAP le -1 or
i_srAP=2) and i_srMI le -1)) i_alg_CAD=-1.

IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpMI=2 and (i_gpAP le -1 or i_gpAP=2) and (i_srAP le -1 or i_srAP=2) and i_srMI le -1)) i_alg_CAD=-1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_srAP=1 and (i_srMI=1 OR i_gpAP=1 OR i_gpMI=1))) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_srMI=1 and (i_srAP=1 OR i_gpAP=1 OR i_gpMI=1))) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpAP=1 and (hgaps=1 or cgaps=1 or egaps=1 or fgaps=1))) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpMI=1 and (hgmis=1 or cgmis=1 or egmis=1 or fgmis=1))) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpAP=1 and hgaps le 0) and (i_srMI=1 or i_srAP=1 or i_gpMI=1)) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpMI=1 and hgmis le 0) and (i_srMI=1 or i_srAP=1 or i_gpAP=1)) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_srAP=1 and i_srMI le 0) and (i_gpAP=2 or i_gpMI=2)) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_srMI=1) and (i_gpAP=2 or i_srAP=2 or i_gpMI=2)) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpAP=1 and i_srMI le 0) and (i_srAP=2 and i_gpMI=2)) i_alg_CAD=1.
IF ((i_mAP le 0 and i_surCAD le 0) and (i_gpMI=1 and i_srMI le 0) and (i_gpAP=2 or i_srAP=2)) i_alg_CAD=1.
IF (i_mAP=1 or i_surCAD=1) i_alg_CAD=1.
VARIABLE LABELS i_alg_CAD 'I wave: coronary artery disease'.
VALUE LABELS i_alg_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'.

*****************CVD longitudinal cleaning****************.
*optional: once CVD always CVD.
*arrythmia.
RECODE c_alg_ARI (ELSE=Copy) INTO c_alg_ARI_ruw.
VARIABLE LABELS c_alg_ARI_ruw 'ARI at C, unadjusted for ARI status at previous waves'.
RECODE d_alg_ARI (ELSE=Copy) INTO d_alg_ARI_ruw.
VARIABLE LABELS d_alg_ARI_ruw 'ARI at D, unadjusted for ARI status at previous waves'.
RECODE e_alg_ARI (ELSE=Copy) INTO e_alg_ARI_ruw.
VARIABLE LABELS e_alg_ARI_ruw 'ARI at E, unadjusted for ARI status at previous waves'.
RECODE f_alg_ARI (ELSE=Copy) INTO f_alg_ARI_ruw.
VARIABLE LABELS f_alg_ARI_ruw 'ARI at F, unadjusted for ARI status at previous waves'.
RECODE g_alg_ARI (ELSE=Copy) INTO g_alg_ARI_ruw.
VARIABLE LABELS g_alg_ARI_ruw 'ARI at G, unadjusted for ARI status at previous waves'.
RECODE h_alg_ARI (ELSE=Copy) INTO h_alg_ARI_ruw.
VARIABLE LABELS h_alg_ARI_ruw 'ARI at H, unadjusted for ARI status at previous waves'.
RECODE i_alg_ARI (ELSE=Copy) INTO i_alg_ARI_ruw.
VARIABLE LABELS i_alg_ARI_ruw 'ARI at i, unadjusted for ARI status at previous waves'.

IF (b_ARI=1) c_alg_ARI=1.
IF (c_alg_ARI=1) d_alg_ARI=1.
IF (d_alg_ARI=1) e_alg_ARI=1.

```
IF (e_alg_ARI=1) f_alg_ARI=1.
IF (f_alg_ARI=1) g_alg_ARI=1.
IF (g_alg_ARI=1) h_alg_ARI=1.
IF (h_alg_ARI=1) i_alg_ARI=1.

*MI.
RECODE c_alg_MI (ELSE=Copy) INTO c_alg_MI_ruw.
VARIABLE LABELS  c_alg_MI_ruw 'MI at C, unadjusted for MI status at previous waves'.
RECODE d_alg_MI (ELSE=Copy) INTO d_alg_MI_ruw.
VARIABLE LABELS  d_alg_MI_ruw 'MI at D, unadjusted for MI status at previous waves'.
RECODE e_alg_MI (ELSE=Copy) INTO e_alg_MI_ruw.
VARIABLE LABELS  e_alg_MI_ruw 'MI at E, unadjusted for MI status at previous waves'.
RECODE f_alg_MI (ELSE=Copy) INTO f_alg_MI_ruw.
VARIABLE LABELS  f_alg_MI_ruw 'MI at F, unadjusted for MI status at previous waves'.
RECODE g_alg_MI (ELSE=Copy) INTO g_alg_MI_ruw.
VARIABLE LABELS  g_alg_MI_ruw 'MI at G, unadjusted for MI status at previous waves'.
RECODE h_alg_MI (ELSE=Copy) INTO h_alg_MI_ruw.
VARIABLE LABELS  h_alg_MI_ruw 'MI at H, unadjusted for MI status at previous waves'.
RECODE i_alg_MI (ELSE=Copy) INTO i_alg_MI_ruw.
VARIABLE LABELS  i_alg_MI_ruw 'MI at I, unadjusted for MI status at previous waves'.

IF (b_MI=1) c_alg_MI=1.
IF (c_alg_MI=1) d_alg_MI=1.
IF (d_alg_MI=1) e_alg_MI=1.
IF (e_alg_MI=1) f_alg_MI=1.
IF (f_alg_MI=1) g_alg_MI=1.
IF (g_alg_MI=1) h_alg_MI=1.
IF (h_alg_MI=1) i_alg_MI=1.

*AP.
RECODE c_alg_AP (ELSE=Copy) INTO c_alg_AP_ruw.
VARIABLE LABELS  c_alg_AP_ruw 'AP at C, unadjusted for AP status at previous waves'.
RECODE d_alg_AP (ELSE=Copy) INTO d_alg_AP_ruw.
VARIABLE LABELS  d_alg_AP_ruw 'AP at D, unadjusted for AP status at previous waves'.
RECODE e_alg_AP (ELSE=Copy) INTO e_alg_AP_ruw.
VARIABLE LABELS  e_alg_AP_ruw 'AP at E, unadjusted for AP status at previous waves'.
RECODE f_alg_AP (ELSE=Copy) INTO f_alg_AP_ruw.
VARIABLE LABELS  f_alg_AP_ruw 'AP at F, unadjusted for AP status at previous waves'.
RECODE g_alg_AP (ELSE=Copy) INTO g_alg_AP_ruw.
VARIABLE LABELS  g_alg_AP_ruw 'AP at G, unadjusted for AP status at previous waves'.
RECODE h_alg_AP (ELSE=Copy) INTO h_alg_AP_ruw.
VARIABLE LABELS  h_alg_AP_ruw 'AP at H, unadjusted for AP status at previous waves'.
RECODE i_alg_AP (ELSE=Copy) INTO i_alg_AP_ruw.
VARIABLE LABELS  i_alg_AP_ruw 'AP at I, unadjusted for AP status at previous waves'.

IF (b_AP=1) c_alg_AP=1.
IF (c_alg_AP=1) d_alg_AP=1.
IF (d_alg_AP=1) e_alg_AP=1.
IF (e_alg_AP=1) f_alg_AP=1.
IF (f_alg_AP=1) g_alg_AP=1.
IF (g_alg_AP=1) h_alg_AP=1.
IF (h_alg_AP=1) i_alg_AP=1.
```

*CVA.
RECODE c_alg_CVA (ELSE=Copy) INTO c_alg_CVA_ruw.
VARIABLE LABELS c_alg_CVA_ruw 'CVA at C, unadjusted for CVA status at previous waves'.
RECODE d_alg_CVA (ELSE=Copy) INTO d_alg_CVA_ruw.
VARIABLE LABELS d_alg_CVA_ruw 'CVA at D, unadjusted for CVA status at previous waves'.
RECODE e_alg_CVA (ELSE=Copy) INTO e_alg_CVA_ruw.
VARIABLE LABELS e_alg_CVA_ruw 'CVA at E, unadjusted for CVA status at previous waves'.
RECODE f_alg_CVA (ELSE=Copy) INTO f_alg_CVA_ruw.
VARIABLE LABELS f_alg_CVA_ruw 'CVA at F, unadjusted for CVA status at previous waves'.
RECODE g_alg_CVA (ELSE=Copy) INTO g_alg_CVA_ruw.
VARIABLE LABELS g_alg_CVA_ruw 'CVA at G, unadjusted for CVA status at previous waves'.
RECODE h_alg_CVA (ELSE=Copy) INTO h_alg_CVA_ruw.
VARIABLE LABELS h_alg_CVA_ruw 'CVA at H, unadjusted for CVA status at previous waves'.
RECODE i_alg_CVA (ELSE=Copy) INTO i_alg_CVA_ruw.
VARIABLE LABELS i_alg_CVA_ruw 'CVA at I, unadjusted for CVA status at previous waves'.

IF (b_CVA=1) c_alg_CVA=1.
IF (c_alg_CVA=1) d_alg_CVA=1.
IF (d_alg_CVA=1) e_alg_CVA=1.
IF (e_alg_CVA=1) f_alg_CVA=1.
IF (f_alg_CVA=1) g_alg_CVA=1.
IF (g_alg_CVA=1) h_alg_CVA=1.
IF (h_alg_CVA=1) i_alg_CVA=1.

*CHF.
RECODE c_alg_CHF (ELSE=Copy) INTO c_alg_CHF_ruw.
VARIABLE LABELS c_alg_CHF_ruw 'CHF at C, unadjusted for CHF status at previous waves'.
RECODE d_alg_CHF (ELSE=Copy) INTO d_alg_CHF_ruw.
VARIABLE LABELS d_alg_CHF_ruw 'CHF at D, unadjusted for CHF status at previous waves'.
RECODE e_alg_CHF (ELSE=Copy) INTO e_alg_CHF_ruw.
VARIABLE LABELS e_alg_CHF_ruw 'CHF at E, unadjusted for CHF status at previous waves'.
RECODE f_alg_CHF (ELSE=Copy) INTO f_alg_CHF_ruw.
VARIABLE LABELS f_alg_CHF_ruw 'CHF at F, unadjusted for CHF status at previous waves'.
RECODE g_alg_CHF (ELSE=Copy) INTO g_alg_CHF_ruw.
VARIABLE LABELS g_alg_CHF_ruw 'CHF at G, unadjusted for CHF status at previous waves'.
RECODE h_alg_CHF (ELSE=Copy) INTO h_alg_CHF_ruw.
VARIABLE LABELS h_alg_CHF_ruw 'CHF at H, unadjusted for CHF status at previous waves'.
RECODE i_alg_CHF (ELSE=Copy) INTO i_alg_CHF_ruw.
VARIABLE LABELS i_alg_CHF_ruw 'CHF at I, unadjusted for CHF status at previous waves'.

IF (b_CHF=1) c_alg_CHF=1.
IF (c_alg_CHF=1) d_alg_CHF=1.
IF (d_alg_CHF=1) e_alg_CHF=1.
IF (e_alg_CHF=1) f_alg_CHF=1.
IF (f_alg_CHF=1) g_alg_CHF=1.
IF (g_alg_CHF=1) h_alg_CHF=1.
IF (h_alg_CHF=1) i_alg_CHF=1.

*PAD.
RECODE c_alg_PAD (ELSE=Copy) INTO c_alg_PAD_ruw.
VARIABLE LABELS c_alg_PAD_ruw 'PAD at C, unadjusted for PAD status at previous waves'.

RECODE d_alg_PAD (ELSE=Copy) INTO d_alg_PAD_ruw.
VARIABLE LABELS d_alg_PAD_ruw 'PAD at D, unadjusted for PAD status at previous waves'.
RECODE e_alg_PAD (ELSE=Copy) INTO e_alg_PAD_ruw.
VARIABLE LABELS e_alg_PAD_ruw 'PAD at E, unadjusted for PAD status at previous waves'.
RECODE f_alg_PAD (ELSE=Copy) INTO f_alg_PAD_ruw.
VARIABLE LABELS f_alg_PAD_ruw 'PAD at F, unadjusted for PAD status at previous waves'.
RECODE g_alg_PAD (ELSE=Copy) INTO g_alg_PAD_ruw.
VARIABLE LABELS g_alg_PAD_ruw 'PAD at G, unadjusted for PAD status at previous waves'.
RECODE h_alg_PAD (ELSE=Copy) INTO h_alg_PAD_ruw.
VARIABLE LABELS h_alg_PAD_ruw 'PAD at H, unadjusted for PAD status at previous waves'.
RECODE i_alg_PAD (ELSE=Copy) INTO i_alg_PAD_ruw.
VARIABLE LABELS i_alg_PAD_ruw 'PAD at H, unadjusted for PAD status at previous waves'.

IF (b_PAD=1) c_alg_PAD=1.
IF (c_alg_PAD=1) d_alg_PAD=1.
IF (d_alg_PAD=1) e_alg_PAD=1.
IF (e_alg_PAD=1) f_alg_PAD=1.
IF (f_alg_PAD=1) g_alg_PAD=1.
IF (g_alg_PAD=1) h_alg_PAD=1.
IF (h_alg_PAD=1) i_alg_PAD=1.

*CAD.
RECODE c_alg_CAD (ELSE=Copy) INTO c_alg_CAD_ruw.
VARIABLE LABELS c_alg_CAD_ruw 'CAD at C, unadjusted for CAD status at previous waves'.
RECODE d_alg_CAD (ELSE=Copy) INTO d_alg_CAD_ruw.
VARIABLE LABELS d_alg_CAD_ruw 'CAD at D, unadjusted for CAD status at previous waves'.
RECODE e_alg_CAD (ELSE=Copy) INTO e_alg_CAD_ruw.
VARIABLE LABELS e_alg_CAD_ruw 'CAD at E, unadjusted for CAD status at previous waves'.
RECODE f_alg_CAD (ELSE=Copy) INTO f_alg_CAD_ruw.
VARIABLE LABELS f_alg_CAD_ruw 'CAD at F, unadjusted for CAD status at previous waves'.
RECODE g_alg_CAD (ELSE=Copy) INTO g_alg_CAD_ruw.
VARIABLE LABELS g_alg_CAD_ruw 'CAD at G, unadjusted for CAD status at previous waves'.
RECODE h_alg_CAD (ELSE=Copy) INTO h_alg_CAD_ruw.
VARIABLE LABELS h_alg_CAD_ruw 'CAD at H, unadjusted for CAD status at previous waves'.
RECODE i_alg_CAD (ELSE=Copy) INTO i_alg_CAD_ruw.
VARIABLE LABELS i_alg_CAD_ruw 'CAD at I, unadjusted for CAD status at previous waves'.

IF (b_CAD=1) c_alg_CAD=1.
IF (c_alg_CAD=1) d_alg_CAD=1.
IF (d_alg_CAD=1) e_alg_CAD=1.
IF (e_alg_CAD=1) f_alg_CAD=1.
IF (f_alg_CAD=1) g_alg_CAD=1.
IF (g_alg_CAD=1) h_alg_CAD=1.
IF (h_alg_CAD=1) i_alg_CAD=1.
*****************CVD Defining dropouts****************.
*Used LASA datafiles and variables: LASAZ002 / cresult, dresult, eresult, fresult, gresult hresult iresult.
*ARI.
*C wave.
RECODE c_alg_ARI (ELSE=Copy) INTO c_ARI.
IF (cresult le 4) c_ARI=5.
VARIABLE LABELS c_ARI 'cardiac arrhythmia at C wave, dropouts defined'.

VALUE LABELS c_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*D wave.
RECODE d_alg_ARI (ELSE=Copy) INTO d_ARI.
IF (dresult le 4) d_ARI=5.
VARIABLE LABELS d_ARI 'cardiac arrhythmia at D wave, dropouts defined'.
VALUE LABELS d_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*E wave.
RECODE e_alg_ARI (ELSE=Copy) INTO e_ARI.
IF (eresult le 4) e_ARI=5.
VARIABLE LABELS e_ARI 'cardiac arrhythmia at E wave, dropouts defined'.
VALUE LABELS e_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*F wave.
RECODE f_alg_ARI (ELSE=Copy) INTO f_ARI.
IF (fresult le 4) f_ARI=5.
VARIABLE LABELS f_ARI 'cardiac arrhythmia at F wave, dropouts defined'.
VALUE LABELS f_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*G wave.
RECODE g_alg_ARI (ELSE=Copy) INTO g_ARI.
IF (gresult le 4) g_ARI=5.
VARIABLE LABELS g_ARI 'cardiac arrhythmia at G wave, dropouts defined'.
VALUE LABELS g_ARI
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.

```
*H wave.
RECODE h_alg_ARI (ELSE=Copy) INTO h_ARI.
IF (hresult le 4) h_ARI=5.
VARIABLE LABELS  h_ARI 'cardiac arrhythmia at H wave, dropouts defined'.
VALUE LABELS h_ARI
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'
          5 'drop-out'.


*I wave.
RECODE i_alg_ARI (ELSE=Copy) INTO i_ARI.
IF (iresult le 4) i_ARI=5.
VARIABLE LABELS  i_ARI 'cardiac arrhythmia at I wave, dropouts defined'.
VALUE LABELS i_ARI
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'
          5 'drop-out'.
*MI.
*C wave.
RECODE c_alg_MI (ELSE=Copy) INTO c_MI.
IF (cresult le 4) c_MI=5.
VARIABLE LABELS  c_MI 'myocardial infarction at C wave, dropouts defined'.
VALUE LABELS c_MI
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'
          5 'drop-out'.
*D wave.
RECODE d_alg_MI (ELSE=Copy) INTO d_MI.
IF (dresult le 4) d_MI=5.
VARIABLE LABELS  d_MI 'myocardial infarction at D wave, dropouts defined'.
VALUE LABELS d_MI
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'
          5 'drop-out'.
*E wave.
RECODE e_alg_MI (ELSE=Copy) INTO e_MI.
IF (eresult le 4) e_MI=5.
VARIABLE LABELS  e_MI 'myocardial infarction at E wave, dropouts defined'.
VALUE LABELS e_MI
          -1 'missing'
```

0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.
*F wave.
RECODE f_alg_MI (ELSE=Copy) INTO f_MI.
IF (fresult le 4) f_MI=5.
VARIABLE LABELS f_MI 'myocardial infarction at F wave, dropouts defined'.
VALUE LABELS f_MI
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.
*G wave.
RECODE g_alg_MI (ELSE=Copy) INTO g_MI.
IF (gresult le 4) g_MI=5.
VARIABLE LABELS g_MI 'myocardial infarction at G wave, dropouts defined'.
VALUE LABELS g_MI
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.

*H wave.
RECODE h_alg_MI (ELSE=Copy) INTO h_MI.
IF (hresult le 4) h_MI=5.
VARIABLE LABELS h_MI 'myocardial infarction at H wave, dropouts defined'.
VALUE LABELS h_MI
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.
*I wave.
RECODE i_alg_MI (ELSE=Copy) INTO i_MI.
IF (iresult le 4) i_MI=5.
VARIABLE LABELS i_MI 'myocardial infarction at I wave, dropouts defined'.
VALUE LABELS i_MI
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.

*AP.

*C wave.
RECODE c_alg_AP (ELSE=Copy) INTO c_AP.
IF (cresult le 4) c_AP=5.
VARIABLE LABELS c_AP 'angina pectoris at C wave, dropouts defined'.
VALUE LABELS c_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*D wave.
RECODE d_alg_AP (ELSE=Copy) INTO d_AP.
IF (dresult le 4) d_AP=5.
VARIABLE LABELS d_AP 'angina pectoris at D wave, dropouts defined'.
VALUE LABELS d_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*E wave.
RECODE e_alg_AP (ELSE=Copy) INTO e_AP.
IF (eresult le 4) e_AP=5.
VARIABLE LABELS e_AP 'angina pectoris at E wave, dropouts defined'.
VALUE LABELS e_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*F wave.
RECODE f_alg_AP (ELSE=Copy) INTO f_AP.
IF (fresult le 4) f_AP=5.
VARIABLE LABELS f_AP 'angina pectoris at F wave, dropouts defined'.
VALUE LABELS f_AP
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*G wave.
RECODE g_alg_AP (ELSE=Copy) INTO g_AP.
IF (gresult le 4) g_AP=5.
VARIABLE LABELS g_AP 'angina pectoris at G wave, dropouts defined'.
VALUE LABELS g_AP
        -1 'missing'
        0 'no'
        1 'definite'

```
                2 'possible'
                3 'contradictory'
                5 'drop-out'.
*H wave.
RECODE h_alg_AP (ELSE=Copy) INTO h_AP.
IF (hresult le 4) h_AP=5.
VARIABLE LABELS  h_AP 'angina pectoris at H wave, dropouts defined'.
VALUE LABELS h_AP
                -1 'missing'
                0 'no'
                1 'definite'
                2 'possible'
                3 'contradictory'
                5 'drop-out'.


*I wave.
RECODE i_alg_AP (ELSE=Copy) INTO i_AP.
IF (iresult le 4) i_AP=5.
VARIABLE LABELS  i_AP 'angina pectoris at I wave, dropouts defined'.
VALUE LABELS i_AP
                -1 'missing'
                0 'no'
                1 'definite'
                2 'possible'
                3 'contradictory'
                5 'drop-out'.
*CVA.
*C wave.
RECODE c_alg_CVA (ELSE=Copy) INTO c_CVA.
IF (cresult le 4) c_CVA=5.
VARIABLE LABELS  c_CVA 'cerebrovascular accident at C wave, dropouts defined'.
VALUE LABELS c_CVA
                -1 'missing'
                0 'no'
                1 'definite'
                2 'possible'
                3 'contradictory'
                5 'drop-out'.
*D wave.
RECODE d_alg_CVA (ELSE=Copy) INTO d_CVA.
IF (dresult le 4) d_CVA=5.
VARIABLE LABELS  d_CVA 'cerebrovascular accident at D wave, dropouts defined'.
VALUE LABELS d_CVA
                -1 'missing'
                0 'no'
                1 'definite'
                2 'possible'
                3 'contradictory'
                5 'drop-out'.
*E wave.
RECODE e_alg_CVA (ELSE=Copy) INTO e_CVA.
IF (eresult le 4) e_CVA=5.
```

VARIABLE LABELS e_CVA 'cerebrovascular accident at E wave, dropouts defined'.
VALUE LABELS e_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*F wave.
RECODE f_alg_CVA (ELSE=Copy) INTO f_CVA.
IF (fresult le 4) f_CVA=5.
VARIABLE LABELS f_CVA 'cerebrovascular accident at F wave, dropouts defined'.
VALUE LABELS f_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*G wave.
RECODE g_alg_CVA (ELSE=Copy) INTO g_CVA.
IF (gresult le 4) g_CVA=5.
VARIABLE LABELS g_CVA 'cerebrovascular accident at G wave, dropouts defined'.
VALUE LABELS g_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*H wave.
RECODE h_alg_CVA (ELSE=Copy) INTO h_CVA.
IF (hresult le 4) h_CVA=5.
VARIABLE LABELS h_CVA 'cerebrovascular accident at H wave, dropouts defined'.
VALUE LABELS h_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.

*I wave.
RECODE i_alg_CVA (ELSE=Copy) INTO i_CVA.
IF (iresult le 4) i_CVA=5.
VARIABLE LABELS i_CVA 'cerebrovascular accident at I wave, dropouts defined'.
VALUE LABELS i_CVA
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'

```
            5 'drop-out'.
*CHF.
*C wave.
RECODE c_alg_CHF (ELSE=Copy) INTO c_CHF.
IF (cresult le 4) c_CHF=5.
VARIABLE LABELS  c_CHF 'congestive heart failure at C wave, dropouts defined'.
VALUE LABELS c_CHF
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.
*D wave.
RECODE d_alg_CHF (ELSE=Copy) INTO d_CHF.
IF (dresult le 4) d_CHF=5.
VARIABLE LABELS  d_CHF 'congestive heart failure at D wave, dropouts defined'.
VALUE LABELS d_CHF
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.
*E wave.
RECODE e_alg_CHF (ELSE=Copy) INTO e_CHF.
IF (eresult le 4) e_CHF=5.
VARIABLE LABELS  e_CHF 'congestive heart failure at E wave, dropouts defined'.
VALUE LABELS e_CHF
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.
*F wave.
RECODE f_alg_CHF (ELSE=Copy) INTO f_CHF.
IF (fresult le 4) f_CHF=5.
VARIABLE LABELS  f_CHF 'congestive heart failure at F wave, dropouts defined'.
VALUE LABELS f_CHF
            -1 'missing'
            0 'no'
            1 'definite'
            2 'possible'
            3 'contradictory'
            5 'drop-out'.
*G wave.
RECODE g_alg_CHF (ELSE=Copy) INTO g_CHF.
IF (gresult le 4) g_CHF=5.
VARIABLE LABELS  g_CHF 'congestive heart failure at G wave, dropouts defined'.
VALUE LABELS g_CHF
            -1 'missing'
```

0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*H wave.
RECODE h_alg_CHF (ELSE=Copy) INTO h_CHF.
IF (hresult le 4) h_CHF=5.
VARIABLE LABELS h_CHF 'congestive heart failure at G wave, dropouts defined'.
VALUE LABELS h_CHF
                    -1 'missing'
                    0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.

*I wave.
RECODE i_alg_CHF (ELSE=Copy) INTO i_CHF.
IF (iresult le 4) i_CHF=5.
VARIABLE LABELS i_CHF 'congestive heart failure at I wave, dropouts defined'.
VALUE LABELS i_CHF
                    -1 'missing'
                    0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*PAD.
*C wave.
RECODE c_alg_PAD (ELSE=Copy) INTO c_PAD.
IF (cresult le 4) c_PAD=5.
VARIABLE LABELS c_PAD 'peripheral artery failure at C wave, dropouts defined'.
VALUE LABELS c_PAD
                    -1 'missing'
                    0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*D wave.
RECODE d_alg_PAD (ELSE=Copy) INTO d_PAD.
IF (dresult le 4) d_PAD=5.
VARIABLE LABELS d_PAD 'peripheral artery failure at D wave, dropouts defined'.
VALUE LABELS d_PAD
                    -1 'missing'
                    0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*E wave.

RECODE e_alg_PAD (ELSE=Copy) INTO e_PAD.
IF (eresult le 4) e_PAD=5.
VARIABLE LABELS e_PAD 'peripheral artery failure at E wave, dropouts defined'.
VALUE LABELS e_PAD
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'
          5 'drop-out'.
*F wave.
RECODE f_alg_PAD (ELSE=Copy) INTO f_PAD.
IF (fresult le 4) f_PAD=5.
VARIABLE LABELS f_PAD 'peripheral artery failure at F wave, dropouts defined'.
VALUE LABELS f_PAD
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'
          5 'drop-out'.
*G wave.
RECODE g_alg_PAD (ELSE=Copy) INTO g_PAD.
IF (gresult le 4) g_PAD=5.
VARIABLE LABELS g_PAD 'peripheral artery failure at G wave, dropouts defined'.
VALUE LABELS g_PAD
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'
          5 'drop-out'.
*H wave.
RECODE h_alg_PAD (ELSE=Copy) INTO h_PAD.
IF (hresult le 4) h_PAD=5.
VARIABLE LABELS h_PAD 'peripheral artery failure at H wave, dropouts defined'.
VALUE LABELS h_PAD
          -1 'missing'
          0 'no'
          1 'definite'
          2 'possible'
          3 'contradictory'
          5 'drop-out'.

*I wave.
RECODE i_alg_PAD (ELSE=Copy) INTO i_PAD.
IF (iresult le 4) i_PAD=5.
VARIABLE LABELS i_PAD 'peripheral artery failure at I wave, dropouts defined'.
VALUE LABELS i_PAD
          -1 'missing'
          0 'no'
          1 'definite'

2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*CAD.
*C wave.
RECODE c_alg_CAD (ELSE=Copy) INTO c_CAD.
IF (cresult le 4) c_CAD=5.
VARIABLE LABELS c_CAD 'coronary artery disease at C wave, dropouts defined'.
VALUE LABELS c_CAD
                    -1 'missing'
                    0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*D wave.
RECODE d_alg_CAD (ELSE=Copy) INTO d_CAD.
IF (dresult le 4) d_CAD=5.
VARIABLE LABELS d_CAD 'coronary artery disease at D wave, dropouts defined'.
VALUE LABELS d_CAD
                    -1 'missing'
                    0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*E wave.
RECODE e_alg_CAD (ELSE=Copy) INTO e_CAD.
IF (eresult le 4) e_CAD=5.
VARIABLE LABELS e_CAD 'coronary artery disease at E wave, dropouts defined'.
VALUE LABELS e_CAD
                    -1 'missing'
                    0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*F wave.
RECODE f_alg_CAD (ELSE=Copy) INTO f_CAD.
IF (fresult le 4) f_CAD=5.
VARIABLE LABELS f_CAD 'coronary artery disease at F wave, dropouts defined'.
VALUE LABELS f_CAD
                    -1 'missing'
                    0 'no'
                    1 'definite'
                    2 'possible'
                    3 'contradictory'
                    5 'drop-out'.
*G wave.
RECODE g_alg_CAD (ELSE=Copy) INTO g_CAD.
IF (gresult le 4) g_CAD=5.
VARIABLE LABELS g_CAD 'coronary artery disease at G wave, dropouts defined'.

VALUE LABELS g_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.
*H wave.
RECODE h_alg_CAD (ELSE=Copy) INTO h_CAD.
IF (hresult le 4) h_CAD=5.
VARIABLE LABELS h_CAD 'coronary artery disease at H wave, dropouts defined'.
VALUE LABELS h_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.

*I wave.
RECODE i_alg_CAD (ELSE=Copy) INTO i_CAD.
IF (iresult le 4) i_CAD=5.
VARIABLE LABELS i_CAD 'coronary artery disease at I wave, dropouts defined'.
VALUE LABELS i_CAD
        -1 'missing'
        0 'no'
        1 'definite'
        2 'possible'
        3 'contradictory'
        5 'drop-out'.

*longitudinal additional cleaning to reduce missing values.
*ari.
if (b_ari=-1 and c_ari=-1 and d_ari=-1 and e_ari=-1 and f_ari=-1 and g_ari=-1 and h_ari=-1 and
i_ari=0) h_ari=0.
if (b_ari=-1 and c_ari=-1 and d_ari=-1 and e_ari=-1 and f_ari=-1 and g_ari=-1 and h_ari=0) g_ari=0.
if (b_ari=-1 and c_ari=-1 and d_ari=-1 and e_ari=-1 and f_ari=-1 and g_ari=0) f_ari=0.
if (b_ari=-1 and c_ari=-1 and d_ari=-1 and e_ari=-1 and f_ari=0) e_ari=0.
if (b_ari=-1 and c_ari=-1 and d_ari=-1 and e_ari=0) d_ari=0.
if (b_ari=-1 and c_ari=-1 and d_ari=0) c_ari=0.
if (b_ari=-1 and c_ari=0) b_ari=0.
if (b_ari=-1 and c_ari=-1 and d_ari=0) b_ari=0.
if (b_ari=-1 and c_ari=-1 and d_ari=0) c_ari=0.
if (b_ari=0 and c_ari=-1 and d_ari=0) c_ari=0.
if (b_ari=0 and c_ari=-1 and d_ari=-1 and e_ari=0) c_ari=0.
if (b_ari=0 and c_ari=0 and d_ari=-1 and e_ari=0) d_ari=0.
if (d_ari=0 and e_ari=-1 and f_ari=-1 and g_ari=0) f_ari=0.
if (c_ari=0 and d_ari=0 and e_ari=-1 and f_ari=0) e_ari=0.
if (e_ari=0 and f_ari=-1 and g_ari=0) f_ari=0.
if (f_ari=0 and g_ari=-1 and h_ari=0) g_ari=0.
if (g_ari=0 and h_ari=-1 and i_ari=0) h_ari=0.
if (b_ari ge 2 and c_ari ge 2 and d_ari=-1) d_ari=2.

if (e_ari=0 and f_ari=-1 and g_ari=-1 and h_ari=0) f_ari=0.
if (f_ari=0 and g_ari=-1 and h_ari=0) g_ari=0.
if (b_ari ge 2 and c_ari=-1 and d_ari=1) c_ari=2.
execute.
*mi.
if (b_mi=-1 and c_mi=-1 and d_mi=-1 and e_mi=-1 and f_mi=-1 and g_mi=-1 and h_mi=-1 and i_mi=0) h_mi=0.
if (b_mi=-1 and c_mi=-1 and d_mi=-1 and e_mi=-1 and f_mi=-1 and g_mi=-1 and h_mi=0) g_mi=0.
if (b_mi=-1 and c_mi=-1 and d_mi=-1 and e_mi=-1 and f_mi=-1 and g_mi=0) f_mi=0.
if (b_mi=-1 and c_mi=-1 and d_mi=-1 and e_mi=-1 and f_mi=0) e_mi=0.
if (b_mi=-1 and c_mi=-1 and d_mi=-1 and e_mi=0) d_mi=0.
if (b_mi=-1 and c_mi=-1 and d_mi=0) c_mi=0.
if (b_mi=-1 and c_mi=0) b_mi=0.
if (b_mi=-1 and c_mi=-1 and d_mi=0) b_mi=0.
if (b_mi=-1 and c_mi=-1 and d_mi=0) c_mi=0.
if (b_mi=0 and c_mi=-1 and d_mi=0) c_mi=0.
if (b_mi=0 and c_mi=-1 and d_mi=-1 and e_mi=0) c_mi=0.
if (b_mi=0 and c_mi=0 and d_mi=-1 and e_mi=0) d_mi=0.
if (d_mi=0 and e_mi=-1 and f_mi=-1 and g_mi=0) f_mi=0.
if (c_mi=0 and d_mi=0 and e_mi=-1 and f_mi=0) e_mi=0.
if (e_mi=0 and f_mi=-1 and g_mi=0) f_mi=0.
if (f_mi=0 and g_mi=-1 and h_mi=0) g_mi=0.
if (g_mi=0 and h_mi=-1 and i_mi=0) h_mi=0.
if (b_mi ge 2 and c_mi=0 and d_mi=0) b_mi=0.
if (b_mi ge 2 and c_mi ge 2 and d_mi=-1) d_mi=2.
if (e_mi=0 and f_mi=-1 and g_mi=-1 and h_mi=0) f_mi=0.
if (f_mi=0 and g_mi=-1 and h_mi=0) g_mi=0.
if (b_mi ge 2 and c_mi=-1 and d_mi=1) c_mi=2.
if (f_mi=0 and g_mi=-1 and h_mi=-1 and i_mi=0) h_mi=0.
if (d_mi=0 and e_mi=-1 and f_mi=-1 and g_mi=-1 and h_mi=0) e_mi=0.
if (d_mi=0 and e_mi=0 and f_mi=-1 and g_mi=-1 and h_mi=0) f_mi=0.
if (d_mi=0 and e_mi=0 and f_mi=0 and g_mi=-1 and h_mi=0) g_mi=0.
Execute.

*ap.
if (b_ap=-1 and c_ap=-1 and d_ap=-1 and e_ap=-1 and f_ap=-1 and g_ap=-1 and h_ap=-1 and i_ap=0) h_ap=0.
if (b_ap=-1 and c_ap=-1 and d_ap=-1 and e_ap=-1 and f_ap=-1 and g_ap=-1 and h_ap=0) g_ap=0.
if (b_ap=-1 and c_ap=-1 and d_ap=-1 and e_ap=-1 and f_ap=-1 and g_ap=0) f_ap=0.
if (b_ap=-1 and c_ap=-1 and d_ap=-1 and e_ap=-1 and f_ap=0) e_ap=0.
if (b_ap=-1 and c_ap=-1 and d_ap=-1 and e_ap=0) d_ap=0.
if (b_ap=-1 and c_ap=-1 and d_ap=0) c_ap=0.
if (b_ap=-1 and c_ap=0) b_ap=0.
if (b_ap=-1 and c_ap=-1 and d_ap=0) b_ap=0.
if (b_ap=-1 and c_ap=-1 and d_ap=0) c_ap=0.
if (b_ap=0 and c_ap=-1 and d_ap=0) c_ap=0.
if (b_ap=0 and c_ap=-1 and d_ap=-1 and e_ap=0) c_ap=0.
if (b_ap=0 and c_ap=0 and d_ap=-1 and e_ap=0) d_ap=0.
if (d_ap=0 and e_ap=-1 and f_ap=-1 and g_ap=0) f_ap=0.
if (c_ap=0 and d_ap=0 and e_ap=-1 and f_ap=0) e_ap=0.
if (e_ap=0 and f_ap=-1 and g_ap=0) f_ap=0.
if (f_ap=0 and g_ap=-1 and h_ap=0) g_ap=0.

if (g_ap=0 and h_ap=-1 and i_ap=0) h_ap=0.
if (b_ap ge 2 and c_ap=0 and d_ap=0) b_ap=0.
if (b_ap ge 2 and c_ap ge 2 and d_ap=-1) d_ap=2.
if (e_ap=0 and f_ap=-1 and g_ap=-1 and h_ap=0) f_ap=0.
if (f_ap=0 and g_ap=-1 and h_ap=0) g_ap=0.
if (b_ap ge 2 and c_ap=-1 and d_ap=1) c_ap=2.
if (f_ap=0 and g_ap=-1 and h_ap=-1 and i_ap=0) h_ap=0.
if (e_ap=0 and f_ap=-1 and g_ap=-1 and h_ap=-1 and i_ap=0) h_ap=0.
if (d_ap=0 and e_ap=-1 and f_ap=-1 and g_ap=-1 and h_ap=0) e_ap=0.
if (d_ap=0 and e_ap=0 and f_ap=-1 and g_ap=-1 and h_ap=0) f_ap=0.
if (d_ap=0 and e_ap=0 and f_ap=0 and g_ap=-1 and h_ap=0) g_ap=0.
Execute.

*cva.
if (b_cva=-1 and c_cva=-1 and d_cva=-1 and e_cva=-1 and f_cva=-1 and g_cva=-1 and h_cva=-1 and i_cva=0) h_cva=0.
if (b_cva=-1 and c_cva=-1 and d_cva=-1 and e_cva=-1 and f_cva=-1 and g_cva=-1 and h_cva=0) g_cva=0.
if (b_cva=-1 and c_cva=-1 and d_cva=-1 and e_cva=-1 and f_cva=-1 and g_cva=0) f_cva=0.
if (b_cva=-1 and c_cva=-1 and d_cva=-1 and e_cva=-1 and f_cva=0) e_cva=0.
if (b_cva=-1 and c_cva=-1 and d_cva=-1 and e_cva=0) d_cva=0.
if (b_cva=-1 and c_cva=-1 and d_cva=0) c_cva=0.
if (b_cva=-1 and c_cva=0) b_cva=0.
if (b_cva=-1 and c_cva=-1 and d_cva=0) b_cva=0.
if (b_cva=-1 and c_cva=-1 and d_cva=0) c_cva=0.
if (b_cva=0 and c_cva=-1 and d_cva=0) c_cva=0.
if (b_cva=0 and c_cva=-1 and d_cva=-1 and e_cva=0) c_cva=0.
if (b_cva=0 and c_cva=0 and d_cva=-1 and e_cva=0) d_cva=0.
if (d_cva=0 and e_cva=-1 and f_cva=-1 and g_cva=0) f_cva=0.
if (c_cva=0 and d_cva=0 and e_cva=-1 and f_cva=0) e_cva=0.
if (e_cva=0 and f_cva=-1 and g_cva=0) f_cva=0.
if (f_cva=0 and g_cva=-1 and h_cva=0) g_cva=0.
if (g_cva=0 and h_cva=-1 and i_cva=0) h_cva=0.
if (b_cva ge 2 and c_cva=0 and d_cva=0) b_cva=0.
if (b_cva ge 2 and c_cva ge 2 and d_cva=-1) d_cva=2.
if (e_cva=0 and f_cva=-1 and g_cva=-1 and h_cva=0) f_cva=0.
if (f_cva=0 and g_cva=-1 and h_cva=0) g_cva=0.
if (b_cva ge 2 and c_cva=-1 and d_cva=1) c_cva=2.
if (f_cva=0 and g_cva=-1 and h_cva=-1 and i_cva=0) h_cva=0.
if (e_cva=0 and f_cva=-1 and g_cva=-1 and h_cva=-1 and i_cva=0) h_cva=0.
if (d_cva=0 and e_cva=-1 and f_cva=-1 and g_cva=-1 and h_cva=0) e_cva=0.
if (d_cva=0 and e_cva=0 and f_cva=-1 and g_cva=-1 and h_cva=0) f_cva=0.
if (d_cva=0 and e_cva=0 and f_cva=0 and g_cva=-1 and h_cva=0) g_cva=0.
Execute.

*chf.
if (b_chf=-1 and c_chf=-1 and d_chf=-1 and e_chf=-1 and f_chf=-1 and g_chf=-1 and h_chf=-1 and i_chf=0) h_chf=0.
if (b_chf=-1 and c_chf=-1 and d_chf=-1 and e_chf=-1 and f_chf=-1 and g_chf=-1 and h_chf=0) g_chf=0.
if (b_chf=-1 and c_chf=-1 and d_chf=-1 and e_chf=-1 and f_chf=-1 and g_chf=0) f_chf=0.
if (b_chf=-1 and c_chf=-1 and d_chf=-1 and e_chf=-1 and f_chf=0) e_chf=0.

if (b_chf=-1 and c_chf=-1 and d_chf=-1 and e_chf=0) d_chf=0.
if (b_chf=-1 and c_chf=-1 and d_chf=0) c_chf=0.
if (b_chf=-1 and c_chf=0) b_chf=0.
if (b_chf=-1 and c_chf=-1 and d_chf=0) b_chf=0.
if (b_chf=-1 and c_chf=-1 and d_chf=0) c_chf=0.
if (b_chf=0 and c_chf=-1 and d_chf=0) c_chf=0.
if (b_chf=0 and c_chf=-1 and d_chf=-1 and e_chf=0) c_chf=0.
if (b_chf=0 and c_chf=0 and d_chf=-1 and e_chf=0) d_chf=0.
if (d_chf=0 and e_chf=-1 and f_chf=-1 and g_chf=0) f_chf=0.
if (c_chf=0 and d_chf=0 and e_chf=-1 and f_chf=0) e_chf=0.
if (e_chf=0 and f_chf=-1 and g_chf=0) f_chf=0.
if (f_chf=0 and g_chf=-1 and h_chf=0) g_chf=0.
if (g_chf=0 and h_chf=-1 and i_chf=0) h_chf=0.
if (b_chf ge 2 and c_chf=0 and d_chf=0) b_chf=0.
if (b_chf ge 2 and c_chf ge 2 and d_chf=-1) d_chf=2.
if (e_chf=0 and f_chf=-1 and g_chf=-1 and h_chf=0) f_chf=0.
if (f_chf=0 and g_chf=-1 and h_chf=0) g_chf=0.
if (b_chf ge 2 and c_chf=-1 and d_chf=1) c_chf=2.
if (f_chf=0 and g_chf=-1 and h_chf=-1 and i_chf=0) h_chf=0.
if (e_chf=0 and f_chf=-1 and g_chf=-1 and h_chf=-1 and i_chf=0) h_chf=0.
if (d_chf=0 and e_chf=-1 and f_chf=-1 and g_chf=-1 and h_chf=0) e_chf=0.
if (d_chf=0 and e_chf=0 and f_chf=-1 and g_chf=-1 and h_chf=0) f_chf=0.
if (d_chf=0 and e_chf=0 and f_chf=0 and g_chf=-1 and h_chf=0) g_chf=0.
Execute.

*pad.
if (b_pad=-1 and c_pad=-1 and d_pad=-1 and e_pad=-1 and f_pad=-1 and g_pad=-1 and h_pad=-1 and i_pad=0) h_pad=0.
if (b_pad=-1 and c_pad=-1 and d_pad=-1 and e_pad=-1 and f_pad=-1 and g_pad=-1 and h_pad=0) g_pad=0.
if (b_pad=-1 and c_pad=-1 and d_pad=-1 and e_pad=-1 and f_pad=-1 and g_pad=0) f_pad=0.
if (b_pad=-1 and c_pad=-1 and d_pad=-1 and e_pad=-1 and f_pad=0) e_pad=0.
if (b_pad=-1 and c_pad=-1 and d_pad=-1 and e_pad=0) d_pad=0.
if (b_pad=-1 and c_pad=-1 and d_pad=0) c_pad=0.
if (b_pad=-1 and c_pad=0) b_pad=0.
if (b_pad=-1 and c_pad=-1 and d_pad=0) b_pad=0.
if (b_pad=-1 and c_pad=-1 and d_pad=0) c_pad=0.
if (b_pad=0 and c_pad=-1 and d_pad=0) c_pad=0.
if (b_pad=0 and c_pad=-1 and d_pad=-1 and e_pad=0) c_pad=0.
if (c_pad=0 and d_pad=-1 and e_pad=-1 and f_pad=0) e_pad=0.
if (b_pad=0 and c_pad=0 and d_pad=-1 and e_pad=0) d_pad=0.
if (d_pad=0 and e_pad=-1 and f_pad=-1 and g_pad=0) f_pad=0.
if (c_pad=0 and d_pad=0 and e_pad=-1 and f_pad=0) e_pad=0.
if (e_pad=0 and f_pad=-1 and g_pad=0) f_pad=0.
if (f_pad=0 and g_pad=-1 and h_pad=0) g_pad=0.
if (g_pad=0 and h_pad=-1 and i_pad=0) h_pad=0.
if (b_pad ge 2 and c_pad=0 and d_pad=0) b_pad=0.
if (b_pad ge 2 and c_pad ge 2 and d_pad=-1) d_pad=2.
if (e_pad=0 and f_pad=-1 and g_pad=-1 and h_pad=0) f_pad=0.
if (f_pad=0 and g_pad=-1 and h_pad=0) g_pad=0.
if (b_pad ge 2 and c_pad=-1 and d_pad=1) c_pad=2.
if (f_pad=0 and g_pad=-1 and h_pad=-1 and i_pad=0) h_pad=0.

if (e_pad=0 and f_pad=-1 and g_pad=-1 and h_pad=-1 and i_pad=0) h_pad=0.
if (d_pad=0 and e_pad=-1 and f_pad=-1 and g_pad=-1 and h_pad=0) e_pad=0.
if (d_pad=0 and e_pad=0 and f_pad=-1 and g_pad=-1 and h_pad=0) f_pad=0.
if (d_pad=0 and e_pad=0 and f_pad=0 and g_pad=-1 and h_pad=0) g_pad=0.
if (f_pad ge 2 and g_pad=-1 and h_pad ge 2) g_pad=2.
if (e_pad ge 2 and f_pad=-1 and g_pad=1) f_pad=2.
Execute.

*CAD.
if (b_cad=-1 and c_cad=-1 and d_cad=-1 and e_cad=-1 and f_cad=-1 and g_cad=-1 and h_cad=-1 and i_cad=0) h_cad=0.
if (b_cad=-1 and c_cad=-1 and d_cad=-1 and e_cad=-1 and f_cad=-1 and g_cad=-1 and h_cad=0) g_cad=0.
if (b_cad=-1 and c_cad=-1 and d_cad=-1 and e_cad=-1 and f_cad=-1 and g_cad=0) f_cad=0.
if (b_cad=-1 and c_cad=-1 and d_cad=-1 and e_cad=-1 and f_cad=0) e_cad=0.
if (b_cad=-1 and c_cad=-1 and d_cad=-1 and e_cad=0) d_cad=0.
if (b_cad=-1 and c_cad=-1 and d_cad=0) c_cad=0.
if (b_cad=-1 and c_cad=0) b_cad=0.
if (b_cad=-1 and c_cad=-1 and d_cad=0) b_cad=0.
if (b_cad=-1 and c_cad=-1 and d_cad=0) c_cad=0.
if (b_cad=0 and c_cad=-1 and d_cad=0) c_cad=0.
if (b_cad=0 and c_cad=-1 and d_cad=-1 and e_cad=0) c_cad=0.
if (c_cad=0 and d_cad=-1 and e_cad=-1 and f_cad=0) e_cad=0.
if (b_cad=0 and c_cad=0 and d_cad=-1 and e_cad=0) d_cad=0.
if (d_cad=0 and e_cad=-1 and f_cad=-1 and g_cad=0) f_cad=0.
if (c_cad=0 and d_cad=0 and e_cad=-1 and f_cad=0) e_cad=0.
if (e_cad=0 and f_cad=-1 and g_cad=0) f_cad=0.
if (f_cad=0 and g_cad=-1 and h_cad=0) g_cad=0.
if (g_cad=0 and h_cad=-1 and i_cad=0) h_cad=0.
if (b_cad ge 2 and c_cad=0 and d_cad=0) b_cad=0.
if (b_cad ge 2 and c_cad ge 2 and d_cad=-1) d_cad=2.
if (e_cad=0 and f_cad=-1 and g_cad=-1 and h_cad=0) f_cad=0.
if (f_cad=0 and g_cad=-1 and h_cad=0) g_cad=0.
if (b_cad ge 2 and c_cad=-1 and d_cad=1) c_cad=2.
if (f_cad=0 and g_cad=-1 and h_cad=-1 and i_cad=0) h_cad=0.
if (e_cad=0 and f_cad=-1 and g_cad=-1 and h_cad=-1 and i_cad=0) h_cad=0.
if (d_cad=0 and e_cad=-1 and f_cad=-1 and g_cad=-1 and h_cad=0) e_cad=0.
if (d_cad=0 and e_cad=0 and f_cad=-1 and g_cad=-1 and h_cad=0) f_cad=0.
if (d_cad=0 and e_cad=0 and f_cad=0 and g_cad=-1 and h_cad=0) g_cad=0.
if (e_cad=0 and f_cad ge 2 and g_cad=0 and (h_cad=0 or h_cad=-1 or h_cad=5)) f_cad=0.
if (f_cad ge 2 and g_cad=0 and h_cad ge 2) g_cad=2.
if (d_cad=0 and e_cad ge 2 and f_cad ge 2 and g_cad=0 and h_cad=0) f_cad=0.
if (d_cad=0 and e_cad ge 2 and f_cad=0 and g_cad=0) e_cad=0.
if (c_cad=0 and d_cad ge 2 and e_cad=0 and f_cad=0) d_cad=0.
if (b_cad=0 and c_cad ge 2 and d_cad=0 and (e_cad=1 or e_cad=0 or e_cad=5)) c_cad=0.
if (b_cad=0 and c_cad ge 2 and d_cad ge 2 and e_cad=0 and f_cad=0 and g_cad=0) c_cad=0.
if (b_cad=0 and c_cad=0 and d_cad ge 2 and e_cad=0 and f_cad=0 and g_cad=0) d_cad=0.
if (e_cad=0 and f_cad=0 and g_cad ge 2 and h_cad=0 and (i_cad=0 or i_cad=5)) g_cad=0.
if (b_cad ge 2 and c_cad=0 and d_cad=0) b_cad=0.
if (f_cad ge 2 and g_cad=-1 and h_cad ge 2) g_cad=2.
if (e_cad ge 2 and f_cad=-1 and g_cad=1) f_cad=2.
Execute.

*cvd var (presence of any CVD).
Compute b_CVD=-3.
VARIABLE LABELS b_CVD 'any CVD at b'.
EXECUTE.
IF (b_MI=1 or b_AP=1 or b_ARI=1 or b_CVA=1 or b_PAD=1 or b_CAD=1 or b_CHF=1) b_CVD=1.
IF (b_MI=0 AND b_AP=0 AND b_ARI=0 AND b_CVA=0 AND b_PAD=0 AND b_CAD=0 AND b_CHF=0) b_CVD=0.
IF (b_MI=-1 AND b_AP=-1 AND b_ARI=-1 AND b_CVA=-1 AND b_PAD=-1 AND b_CAD=-1 AND b_CHF=-1) b_CVD=-1.
IF (b_CVD=-3 and (b_MI=2 or b_AP=2 or b_ARI=2 or b_CVA=2 or b_PAD=2 or b_CAD=2 or b_CHF=2)) b_CVD=2.
IF (b_CVD=-3 and (b_MI=3 or b_AP=3 or b_ARI=3 or b_CVA=3 or b_PAD=3 or b_CAD=3 or b_CHF=3)) b_CVD=3.
EXECUTE.
VALUE LABELS b_CVD
0 'no cvd'
1 'Definite'
2 'possible'
3 'contradictory'
-1 'missing'
-3 'combination of no and missing'.
EXECUTE.

Compute c_CVD=-3.
VARIABLE LABELS c_CVD 'any CVD at c'.
EXECUTE.
IF (c_MI=1 or c_AP=1 or c_ARI=1 or c_CVA=1 or c_PAD=1 or c_CAD=1 or c_CHF=1) c_CVD=1.
IF (c_MI=0 AND c_AP=0 AND c_ARI=0 AND c_CVA=0 AND c_PAD=0 AND c_CAD=0 AND c_CHF=0) c_CVD=0.
IF (c_MI=-1 AND c_AP=-1 AND c_ARI=-1 AND c_CVA=-1 AND c_PAD=-1 AND c_CAD=-1 AND c_CHF=-1) c_CVD=-1.
IF (c_CVD=-3 and (c_MI=2 or c_AP=2 or c_ARI=2 or c_CVA=2 or c_PAD=2 or c_CAD=2 or c_CHF=2)) c_CVD=2.
IF (c_CVD=-3 and (c_MI=3 or c_AP=3 or c_ARI=3 or c_CVA=3 or c_PAD=3 or c_CAD=3 or c_CHF=3)) c_CVD=3.
IF (c_MI=5 AND c_AP=5 AND c_ARI=5 AND c_CVA=5 AND c_PAD=5 AND c_CAD=5 AND c_CHF=5) c_CVD=5.
EXECUTE.
VALUE LABELS c_CVD
0 'no cvd'
1 'Definite'
2 'possible'
3 'contradictory'
5 'dropout'
-1 'missing'
-3 'combination of no and missing'.
EXECUTE.

Compute d_CVD=-3.
VARIABLE LABELS d_CVD 'any CVD at d'.
EXECUTE.

IF (d_MI=1 or d_AP=1 or d_ARI=1 or d_CVA=1 or d_PAD=1 or d_CAD=1 or d_CHF=1) d_CVD=1.
IF (d_MI=0 AND d_AP=0 AND d_ARI=0 AND d_CVA=0 AND d_PAD=0 AND d_CAD=0 AND d_CHF=0)
d_CVD=0.
IF (d_MI=-1 AND d_AP=-1 AND d_ARI=-1 AND d_CVA=-1 AND d_PAD=-1 AND d_CAD=-1 AND d_CHF=-1) d_CVD=-1.
IF (d_CVD=-3 and (d_MI=2 or d_AP=2 or d_ARI=2 or d_CVA=2 or d_PAD=2 or d_CAD=2 or d_CHF=2))
d_CVD=2.
IF (d_CVD=-3 and (d_MI=3 or d_AP=3 or d_ARI=3 or d_CVA=3 or d_PAD=3 or d_CAD=3 or d_CHF=3))
d_CVD=3.
IF (d_MI=5 AND d_AP=5 AND d_ARI=5 AND d_CVA=5 AND d_PAD=5 AND d_CAD=5 AND d_CHF=5)
d_CVD=5.
EXECUTE.
VALUE LABELS d_CVD
0 'no cvd'
1 'Definite'
2 'possible'
3 'contradictory'
5 'dropout'
-1 'missing'
-3 'combination of no and missing'.
EXECUTE.

Compute e_CVD=-3.
VARIABLE LABELS e_CVD 'any CVD at e'.
EXECUTE.
IF (e_MI=1 or e_AP=1 or e_ARI=1 or e_CVA=1 or e_PAD=1 or e_CAD=1 or e_CHF=1) e_CVD=1.
IF (e_MI=0 AND e_AP=0 AND e_ARI=0 AND e_CVA=0 AND e_PAD=0 AND e_CAD=0 AND e_CHF=0)
e_CVD=0.
IF (e_MI=-1 AND e_AP=-1 AND e_ARI=-1 AND e_CVA=-1 AND e_PAD=-1 AND e_CAD=-1 AND e_CHF=-1) e_CVD=-1.
IF (e_CVD=-3 and (e_MI=2 or e_AP=2 or e_ARI=2 or e_CVA=2 or e_PAD=2 or e_CAD=2 or e_CHF=2))
e_CVD=2.
IF (e_CVD=-3 and (e_MI=3 or e_AP=3 or e_ARI=3 or e_CVA=3 or e_PAD=3 or e_CAD=3 or e_CHF=3))
e_CVD=3.
IF (e_MI=5 AND e_AP=5 AND e_ARI=5 AND e_CVA=5 AND e_PAD=5 AND e_CAD=5 AND e_CHF=5)
e_CVD=5.
EXECUTE.
VALUE LABELS e_CVD
0 'no cvd'
1 'Definite'
2 'possible'
3 'contradictory'
5 'dropout'
-1 'missing'
-3 'combination of no and missing'.
EXECUTE.

Compute f_CVD=-3.
VARIABLE LABELS f_CVD 'any CVD at f'.
EXECUTE.
IF (f_MI=1 or f_AP=1 or f_ARI=1 or f_CVA=1 or f_PAD=1 or f_CAD=1 or f_CHF=1) f_CVD=1.

```
IF (f_MI=0 AND f_AP=0 AND f_ARI=0 AND f_CVA=0 AND f_PAD=0 AND f_CAD=0 AND f_CHF=0)
f_CVD=0.
IF (f_MI=-1 AND f_AP=-1 AND f_ARI=-1 AND f_CVA=-1 AND f_PAD=-1 AND f_CAD=-1 AND f_CHF=-1)
f_CVD=-1.
IF (f_CVD=-3 and (f_MI=2 or f_AP=2 or f_ARI=2 or f_CVA=2 or f_PAD=2 or f_CAD=2 or f_CHF=2))
f_CVD=2.
IF (f_CVD=-3 and (f_MI=3 or f_AP=3 or f_ARI=3 or f_CVA=3 or f_PAD=3 or f_CAD=3 or f_CHF=3))
f_CVD=3.
IF (f_MI=5 AND f_AP=5 AND f_ARI=5 AND f_CVA=5 AND f_PAD=5 AND f_CAD=5 AND f_CHF=5)
f_CVD=5.
EXECUTE.
VALUE LABELS f_CVD
0 'no cvd'
1 'Definite'
2 'possible'
3 'contradictory'
5 'dropout'
-1 'missing'
-3 'combination of no and missing'.
EXECUTE.

Compute g_CVD=-3.
VARIABLE LABELS  g_CVD 'any CVD at g'.
EXECUTE.
IF (g_MI=1 or g_AP=1 or g_ARI=1 or g_CVA=1 or g_PAD=1 or g_CAD=1 or g_CHF=1) g_CVD=1.
IF (g_MI=0 AND g_AP=0 AND g_ARI=0 AND g_CVA=0 AND g_PAD=0 AND g_CAD=0 AND g_CHF=0)
g_CVD=0.
IF (g_MI=-1 AND g_AP=-1 AND g_ARI=-1 AND g_CVA=-1 AND g_PAD=-1 AND g_CAD=-1 AND g_CHF=-
1) g_CVD=-1.
IF (g_CVD=-3 and (g_MI=2 or g_AP=2 or g_ARI=2 or g_CVA=2 or g_PAD=2 or g_CAD=2 or g_CHF=2))
g_CVD=2.
IF (g_CVD=-3 and (g_MI=3 or g_AP=3 or g_ARI=3 or g_CVA=3 or g_PAD=3 or g_CAD=3 or g_CHF=3))
g_CVD=3.
IF (g_MI=5 AND g_AP=5 AND g_ARI=5 AND g_CVA=5 AND g_PAD=5 AND g_CAD=5 AND g_CHF=5)
g_CVD=5.
EXECUTE.
VALUE LABELS g_CVD
0 'no cvd'
1 'Definite'
2 'possible'
3 'contradictory'
5 'dropout'
-1 'missing'
-3 'combination of no and missing'.
EXECUTE.

Compute h_CVD=-3.
VARIABLE LABELS  h_CVD 'any CVD at h'.
EXECUTE.
IF (h_MI=1 or h_AP=1 or h_ARI=1 or h_CVA=1 or h_PAD=1 or h_CAD=1 or h_CHF=1) h_CVD=1.
IF (h_MI=0 AND h_AP=0 AND h_ARI=0 AND h_CVA=0 AND h_PAD=0 AND h_CAD=0 AND h_CHF=0)
h_CVD=0.
```

IF (h_MI=-1 AND h_AP=-1 AND h_ARI=-1 AND h_CVA=-1 AND h_PAD=-1 AND h_CAD=-1 AND h_CHF=-1) h_CVD=-1.
IF (h_CVD=-3 and (h_MI=2 or h_AP=2 or h_ARI=2 or h_CVA=2 or h_PAD=2 or h_CAD=2 or h_CHF=2)) h_CVD=2.
IF (h_CVD=-3 and (h_MI=3 or h_AP=3 or h_ARI=3 or h_CVA=3 or h_PAD=3 or h_CAD=3 or h_CHF=3)) h_CVD=3.
IF (h_MI=5 AND h_AP=5 AND h_ARI=5 AND h_CVA=5 AND h_PAD=5 AND h_CAD=5 AND h_CHF=5) h_CVD=5.
EXECUTE.
VALUE LABELS h_CVD
0 'no cvd'
1 'Definite'
2 'possible'
3 'contradictory'
5 'dropout'
-1 'missing'
-3 'combination of no and missing'.
EXECUTE.

Compute i_CVD=-3.
VARIABLE LABELS i_CVD 'any CVD at i'.
EXECUTE.
IF (i_MI=1 or i_AP=1 or i_ARI=1 or i_CVA=1 or i_PAD=1 or i_CAD=1 or i_CHF=1) i_CVD=1.
IF (i_MI=0 AND i_AP=0 AND i_ARI=0 AND i_CVA=0 AND i_PAD=0 AND i_CAD=0 AND i_CHF=0) i_CVD=0.
IF (i_MI=-1 AND i_AP=-1 AND i_ARI=-1 AND i_CVA=-1 AND i_PAD=-1 AND i_CAD=-1 AND i_CHF=-1) i_CVD=-1.
IF (i_CVD=-3 and (i_MI=2 or i_AP=2 or i_ARI=2 or i_CVA=2 or i_PAD=2 or i_CAD=2 or i_CHF=2)) i_CVD=2.
IF (i_CVD=-3 and (i_MI=3 or i_AP=3 or i_ARI=3 or i_CVA=3 or i_PAD=3 or i_CAD=3 or i_CHF=3)) i_CVD=3.
IF (i_MI=5 AND i_AP=5 AND i_ARI=5 AND i_CVA=5 AND i_PAD=5 AND i_CAD=5 AND i_CHF=5) i_CVD=5.
EXECUTE.
VALUE LABELS i_CVD
0 'no cvd'
1 'Definite'
2 'possible'
3 'contradictory'
5 'dropout'
-1 'missing'
-3 'combination of no and missing'.
EXECUTE.

formats bresult bhart01 bhart05 bhart10 bhart11 bhart12 bhart13 bhart15 bhart15b bhart15c bhart15d bdiabe01 bdiabe07 bdiabe09 bdiabe11 bdiabe12 bcva01 bartvei1 bartvei5 bartvei7 bartvei8 bartve8b bartve8c bartve8d cgap cgapy
cgaps cgarrth cgarrty cgarrths cgcva cgcvay cgcvas cgartvei cgartvey cgartves cgmi cgmiy cgmis cgchf cgchfy cgchfs bmed_ang bmed_ari bmed_diu bmed_ino bmed_hyp bgcva bgcvay bgclan bgclany bmvar13 chart01 chart05

chart10 chart11 chart12 chart13 cdiabe01 cdiabe07 cdiabe09 cdiabe11 cdiabe12 ccva01 cartvei1 cartvei5 cartvei7 chart15 chart15d chart15c chart15b cartve8b cartve8d cartve8c cartve8 cmed_ang cmed_ari cmed_diu cmed_ino cmed_hyp

cmvar13 cresult ctcva01 cthart01 ctartve1 dhart01 dhart05 dhart10 dhart11 dhart12 dhart13 ddiabe01 ddiabe07 ddiabe09 ddiabe11 ddiabe12 dcva01 dartvei1 dartvei5 dartvei7 dhart15 dhart15d dhart15c dhart15b dartve8b dartve8d dartve8c

dartve8 dmed_ang dmed_ari dmed_diu dmed_ino dmed_hyp dmvar13 dresult dtpcva01 dtphart1 dtpartv1 dtrcva01 dtrhart1 dtrartv1 ehart01 ehart05 ehart10 ehart11 ehart12 ehart13 ediabe01 ediabe07 ediabe09 ediabe11 ediabe12

ecva01 eartvei1 eartvei5 eartvei7 ehart15 ehart15d ehart15c ehart15b eartve8b eartve8d eartve8c eartve8 egap egapy egaps egarrth egarrty egarrths egcva egcvay egcvas egartvei egartvey egartves egmi egmiy egmis egchf egchfy egchfs emed_ang

emed_ari emed_diu emed_ino emed_hyp emvar13 eresult etpcva01 etphart1 etpartv1 etrcva01 etrhart1 etrartv1 fhart01 fhart05 fhart10 fhart11 fhart12 fhart13 fdiabe01 fdiabe07 fdiabe09 fdiabe11 fdiabe12 fcva01 fartvei1 fartvei5

fartvei7 fhart15 fhart15d fhart15c fhart15b fartve8b fartve8d fartve8c fartve8 fgap fgapy fgaps fgarrth fgarrthy fgarrths fgcva fgcvay fgcvas fgartvei fgartvey fgartves fgmi fgmiy fgmis fgchf fgchfy fgchfs fmed_ang fmed_ari fmed_diu fmed_ino fmed_hyp

fmvar13 fresult ftpcva01 ftphart1 ftpartv1 ftrcva01 ftrhart1 ftrartv1 ghart01 ghart05 ghart10 ghart11 ghart12 ghart13 gdiabe01 gdiabe07 gdiabe09 gdiabe11 gdiabe12 gcva01 gartvei1 gartvei5 gartvei7 ghart15 ghart15d ghart15c ghart15b

gartve8b gartve8d gartve8c gartve8 gmed_ang gmed_ari gmed_diu gmed_ino gmed_hyp GMVAR13 gresult gtpcva01 gtphart1 gtpartv1 gtrcva01 gtrhart1 gtrartv1 hgap hgapy hgaps hgarrth hgarrthy hgarrths

 hgcva hgcvay hgcvas hgartvei hgartvey hgartves hgmi hgmiy hgmis hgchf hgchfy hgchfs HHART01 HHART05 HHART10 HHART11 HHART12 HHART13 HDIABE01 HDIABE07 HDIABE09 HDIABE11 HDIABE12 HCVA01 HARTVEI1 HARTVEI5 HARTVEI7

HHART15 HHART15D HHART15C HHART15B HARTVE8B HARTVE8D HARTVE8C HARTVE8 HMed_ang HMed_ari HMed_diu HMed_ino HMed_hyp HMVAR13 hresult htpcva01 htphart1 htpartv1 htrcva01 htrhart1 htrartv1 t9_dat IHART01 IHART05 IHART10 IHART11

IHART12 IHART13 IDIABE01 IDIABE07 IDIABE09 IDIABE11 IDIABE12 ICVA01 IARTVEI1 IARTVEI5 IARTVEI7 IHART15 IHART15D IHART15C IHART15B IARTVE8B IARTVE8D IARTVE8C IARTVE8 IMed_ang IMed_ari IMed_diu IMed_ino IMed_hyp IMVAR13

iresult itpcva01 itphart1 itpartv1 itrcva01 itrhart1 itrartv1 bmed_beta bmed_stolling bmed_stol_beta t2_YEAR b_surARI b_mARI b_gpARI b_ARI b_srCVA cva1994 cva2000 b_gpCVA b_CVA b_srMI b_gpMI b_MI b_srAP b_gpAP b_mAP b_AP b_srCHF b_gpCHF

b_mCHF b_CHF b_srPAD b_surPAD bPAD94 bpad2000 b_gpPAD b_PAD b_surCAD b_srCAD b_gpCAD b_CAD cmed_beta cmed_stolling cmed_stol_beta t3_YEAR c_surARI c_mARI c_gpARI c_alg_ARI c_srCVA c_gpCVA c_alg_CVA c_srMI c_gpMI c_alg_MI

c_srAP c_gpAP c_mAP c_alg_AP c_srCHF c_gpCHF c_mCHF c_alg_CHF c_srPAD c_surPAD c_gpPAD c_alg_PAD c_surCAD c_srCAD c_gpCAD c_alg_CAD dmed_beta dmed_stolling dmed_stol_beta t4_year d_surARI d_mARI d_gpARI d_alg_ARI

d_srCVA d_gpCVA d_alg_CVA d_srMI d_gpMI d_alg_MI d_srAP d_gpAP d_mAP d_alg_AP d_srCHF d_gpCHF d_mCHF d_alg_CHF d_srPAD d_surPAD d_gpPAD d_alg_PAD d_surCAD d_srCAD d_gpCAD d_alg_CAD emed_beta emed_stolling emed_stol_beta

t5_year e_surARI e_mARI e_gpARI e_alg_ARI e_srCVA e_gpCVA e_alg_CVA e_srMI e_gpmi e_alg_MI e_srAP e_gpAP e_mAP e_alg_AP e_srCHF e_gpCHF e_mCHF e_alg_CHF e_srPAD e_surPAD e_gpPAD e_alg_PAD e_surCAD e_srCAD e_gpCAD e_alg_CAD

fmed_beta fmed_stolling fmed_stol_beta t6_year f_surARI f_mARI f_gpARI f_alg_ARI f_srCVA f_gpCVA f_alg_CVA f_srMI f_gpmi f_alg_MI f_srAP f_gpAP f_mAP f_alg_AP f_srCHF f_gpCHF f_mCHF f_alg_CHF f_srPAD f_surPAD f_gpPAD f_alg_PAD f_surCAD

f_srCAD f_gpCAD f_alg_CAD gmed_beta gmed_stolling gmed_stol_beta t7_year g_surARI g_mARI g_gpARI g_alg_ARI g_srCVA g_gpCVA g_alg_CVA g_srMI g_gpmi g_alg_MI g_srAP g_gpAP g_mAP g_alg_AP g_srCHF g_gpCHF g_mCHF g_alg_CHF

g_srPAD g_surPAD g_gpPAD g_alg_PAD g_surCAD g_srCAD g_gpCAD g_alg_CAD hmed_beta hmed_stolling hmed_stol_beta t8_year h_surARI h_mARI h_gpARI h_alg_ARI h_srCVA h_gpCVA h_alg_CVA h_srMI h_gpmi h_alg_MI h_srAP h_gpAP h_mAP

h_alg_AP h_srCHF h_gpCHF h_mCHF h_alg_CHF h_srPAD h_surPAD h_gpPAD h_alg_PAD h_surCAD h_srCAD h_gpCAD h_alg_CAD imed_beta imed_stolling imed_stol_beta T9_year i_surARI i_mARI i_gpARI i_alg_ARI i_srCVA i_gpCVA i_alg_CVA i_srMI

i_gpmi i_alg_MI i_srAP i_gpAP i_mAP i_alg_AP i_srCHF i_gpCHF i_mCHF i_alg_CHF i_srPAD i_surPAD i_gpPAD i_alg_PAD i_surCAD i_srCAD i_gpCAD i_alg_CAD c_alg_ARI_ruw d_alg_ARI_ruw e_alg_ARI_ruw f_alg_ARI_ruw g_alg_ARI_ruw h_alg_ARI_ruw

i_alg_ARI_ruw c_alg_MI_ruw d_alg_MI_ruw e_alg_MI_ruw f_alg_MI_ruw g_alg_MI_ruw h_alg_MI_ruw i_alg_MI_ruw c_alg_AP_ruw d_alg_AP_ruw e_alg_AP_ruw f_alg_AP_ruw g_alg_AP_ruw h_alg_AP_ruw i_alg_AP_ruw c_alg_CVA_ruw d_alg_CVA_ruw

e_alg_CVA_ruw f_alg_CVA_ruw g_alg_CVA_ruw h_alg_CVA_ruw i_alg_CVA_ruw c_alg_CHF_ruw d_alg_CHF_ruw e_alg_CHF_ruw f_alg_CHF_ruw g_alg_CHF_ruw h_alg_CHF_ruw i_alg_CHF_ruw c_alg_PAD_ruw d_alg_PAD_ruw e_alg_PAD_ruw f_alg_PAD_ruw

g_alg_PAD_ruw h_alg_PAD_ruw i_alg_PAD_ruw c_alg_CAD_ruw d_alg_CAD_ruw e_alg_CAD_ruw f_alg_CAD_ruw g_alg_CAD_ruw h_alg_CAD_ruw i_alg_CAD_ruw c_ARI d_ARI e_ARI f_ARI g_ARI h_ARI i_ARI c_MI d_MI e_MI f_MI g_MI h_MI i_MI c_AP

d_AP e_AP f_AP g_AP h_AP i_AP c_CVA d_CVA e_CVA f_CVA g_CVA h_CVA i_CVA c_CHF d_CHF e_CHF f_CHF g_CHF h_CHF i_CHF c_PAD d_PAD e_PAD f_PAD g_PAD h_PAD i_PAD c_CAD d_CAD e_CAD f_CAD g_CAD h_CAD i_CAD

b_CVD c_CVD d_CVD e_CVD f_CVD g_CVD h_CVD i_CVD (f2).

VARIABLE LEVEL c_alg_ARI_ruw d_alg_ARI_ruw e_alg_ARI_ruw f_alg_ARI_ruw g_alg_ARI_ruw
        h_alg_ARI_ruw i_alg_ARI_ruw c_alg_MI_ruw d_alg_MI_ruw e_alg_MI_ruw f_alg_MI_ruw g_alg_MI_ruw h_alg_MI_ruw
        i_alg_MI_ruw c_alg_AP_ruw d_alg_AP_ruw e_alg_AP_ruw f_alg_AP_ruw g_alg_AP_ruw h_alg_AP_ruw i_alg_AP_ruw
        c_alg_CVA_ruw d_alg_CVA_ruw e_alg_CVA_ruw f_alg_CVA_ruw g_alg_CVA_ruw h_alg_CVA_ruw i_alg_CVA_ruw c_alg_CHF_ruw
        d_alg_CHF_ruw e_alg_CHF_ruw f_alg_CHF_ruw g_alg_CHF_ruw h_alg_CHF_ruw i_alg_CHF_ruw c_alg_PAD_ruw d_alg_PAD_ruw
        e_alg_PAD_ruw f_alg_PAD_ruw g_alg_PAD_ruw h_alg_PAD_ruw i_alg_PAD_ruw c_alg_CAD_ruw d_alg_CAD_ruw e_alg_CAD_ruw
        f_alg_CAD_ruw g_alg_CAD_ruw h_alg_CAD_ruw i_alg_CAD_ruw b_ARI c_ARI d_ARI e_ARI f_ARI g_ARI h_ARI i_ARI b_MI c_MI
        d_MI e_MI f_MI g_MI h_MI i_MI b_AP c_AP d_AP e_AP f_AP g_AP h_AP i_AP b_CVA c_CVA d_CVA e_CVA
        f_CVA g_CVA h_CVA i_CVA b_CHF c_CHF d_CHF e_CHF f_CHF g_CHF h_CHF i_CHF b_PAD c_PAD
        d_PAD e_PAD f_PAD g_PAD h_PAD i_PAD b_CAD c_CAD d_CAD e_CAD f_CAD g_CAD h_CAD i_CAD b_CVD c_CVD d_CVD e_CVD f_CVD g_CVD h_CVD i_CVD (NOMINAL).

*datafile with all variables used (original and created variables).
SAVE OUTFILE='*your directory here*\CVD_1_total.sav'
 /COMPRESSED.

*datafile with only the final CVD diagnoses at B, C, D, E, F, G, H, I of first cohort.
SAVE OUTFILE='*your directory here*\LASAZH01.sav'

```
 /KEEP=respnr c_alg_ARI_ruw d_alg_ARI_ruw e_alg_ARI_ruw f_alg_ARI_ruw g_alg_ARI_ruw
        h_alg_ARI_ruw i_alg_ARI_ruw c_alg_MI_ruw d_alg_MI_ruw e_alg_MI_ruw f_alg_MI_ruw
g_alg_MI_ruw h_alg_MI_ruw
        i_alg_MI_ruw c_alg_AP_ruw d_alg_AP_ruw e_alg_AP_ruw f_alg_AP_ruw g_alg_AP_ruw
h_alg_AP_ruw i_alg_AP_ruw
        c_alg_CVA_ruw d_alg_CVA_ruw e_alg_CVA_ruw f_alg_CVA_ruw g_alg_CVA_ruw
h_alg_CVA_ruw i_alg_CVA_ruw c_alg_CHF_ruw
        d_alg_CHF_ruw e_alg_CHF_ruw f_alg_CHF_ruw g_alg_CHF_ruw h_alg_CHF_ruw
i_alg_CHF_ruw c_alg_PAD_ruw d_alg_PAD_ruw
        e_alg_PAD_ruw f_alg_PAD_ruw g_alg_PAD_ruw h_alg_PAD_ruw i_alg_PAD_ruw
c_alg_CAD_ruw d_alg_CAD_ruw e_alg_CAD_ruw
        f_alg_CAD_ruw g_alg_CAD_ruw h_alg_CAD_ruw i_alg_CAD_ruw b_ARI c_ARI d_ARI e_ARI
f_ARI g_ARI h_ARI i_ARI b_MI c_MI
        d_MI e_MI f_MI g_MI h_MI i_MI b_AP c_AP d_AP e_AP f_AP g_AP h_AP i_AP b_CVA c_CVA
d_CVA e_CVA
        f_CVA g_CVA h_CVA i_CVA b_CHF c_CHF d_CHF e_CHF f_CHF g_CHF h_CHF i_CHF b_PAD
c_PAD
        d_PAD e_PAD f_PAD g_PAD h_PAD i_PAD b_CAD c_CAD d_CAD e_CAD f_CAD g_CAD h_CAD
i_CAD b_CVD c_CVD d_CVD e_CVD f_CVD g_CVD h_CVD i_CVD
 /COMPRESSED.
```