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/*=====
| Covance Study Number   : 000000106331
| Program Name           : adcm.sas
| Purpose                 : Create Adam Dataset (ADCM)
| Input Data              : ads1 ,sdtm.cm
| Output Data             : adma.adcm
|
| Macros Called           :
| Originally Performed by : paddepalli
| Date                    : 13Mar2015
|=====
| Modification History : Original Version
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| Modified by           :
| Modification Date      :
| Modification Reason    :
| Program Version        :
+=====*/

=====;
* START OF PROGRAM CODE
=====;

%m_printto(route=YES);
libname sdtm "/cvn/projects/prj/data/000000106343/datasets/sdtm/sdtmx";
*****;
* bring in CM ;
*****;
data cm;
set sdtm.cm;

keep usubjid cmseq cmspid cmtrt cmdecod cmcat cmindc cmdose cmdosu cmdostot
    cmroute cmstdtc cmstdy cmendtc cmendy epoch cmenrtpt ;
run;

data supp;
set sdtm.suppcm;
where qnam in ('CMPTCD','ATCTXT1','ATCCD1','ATCTXT2','ATCCD2','ATCTXT3','ATCCD3','ATCTXT4','ATCCD4','MHNUM','AENUM','OTHER');
    if idvarval>' ' then cmseq=input(idvarval,8.);
run;
proc sort data=supp;
by usubjid cmseq qnam qval;
run;
proc transpose data=supp out=supp_t(drop = _:);
by usubjid cmseq;
id qnam;
var qval;
idlabel qlabel;
run;
/*Joining CM and SUPPCM */
proc sort data=cm;by usubjid cmseq;run;
proc sort data=supp_t;by usubjid cmseq;run;
data cm_supp;
merge cm supp_t;
by usubjid cmseq;
run;
data cm1;
length aendt asdt 8 CMATCCD1 CMATCCD2 CMATCCD3 CMATCCD4 $8;
set cm_supp;

* dates;
if length(cmstdtc) gt 10 then ASTDT = input(scan(cmstdtc,1,'T'),yymmdd10.);
else if length(cmstdtc) = 10 then ASTDT = input(cmstdtc,yymmdd10.);
if length(cmendtc) gt 10 then AENDT = input(scan(cmendtc,1,'T'),yymmdd10.);
else if length(cmendtc) = 10 then AENDT = input(cmendtc,yymmdd10.);

format asdt aendt date9.;

CMATC1=ATCTXT1;
CMATC2=ATCTXT2;
CMATC3=ATCTXT3;
CMATC4=ATCTXT4;
CMATCCD1=ATCCD1;
CMATCCD2=ATCCD2;
CMATCCD3=ATCCD3;
CMATCCD4=ATCCD4;

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IF OTHER='' THEN OTHER='';

keep      usubjid aenum MHNUM cmseq cmspid cmtrt cmdecod cmcat cminde /*cmclas cmclascd*/
          cmdose cmdosu cmdostot cmroute cmstdtc astdt cmstdy
          cmendtc aendt cmendy cmptcd EPOCH OTHER CMATC1
          CMATC2 CMATC3 CMATC4 CMATCCD1 CMATCCD2 CMATCCD3 CMATCCD4
          /*CMENRF CMSYCD CMSYN*/ CMENRTPT;

run;

*****;
* bring in ADSL ;
*****;

data adsl;
  set adam.adsl;
  /* keep studyid usubjid subjid: siteid age sex: race height weightb1 bmi ucpdgr1 */
  /*      ucpdgr1n nicogr1 nicogr1n targr1 targr1n fsaff1 */
  /*      enr1fl scrff1 complf1 saff1 fupfl fasfl randfl exfl EXNOTRFL enfl trtsdtm trtstmf trtsdt*/
  /*      trtsday trtedtm trtetmf trtedt trteday trtsdt dthfl */
  /*      icfdt FASFL PPROT1FL PPROT2FL PPROT3FL PPROT4FL trt01p trt01pn randdt*/
  /*      trt01a trt01an; */
run;

*****;
* bring in SV ;
*****;

data sv;
  set sdtm.sv (where = (visitnum = 1));
  format scrndt date9.;
  if length(svstdtc) gt 10 then SCRNDT = input(scan(svstdtc,1,'T'),yymmdd10.);
  else if length(svstdtc) = 10 then SCRNDT = input(svstdtc,yymmdd10.);
  keep usubjid svstdtc visit scrndt;
run;

*****;
* Combine ADSL and data *;
*****;
proc sort data=adsl;by usubjid;run;

data slcm(drop = trt01: cmdecod_ cmtrt_ );
  length site 5 cmdecod icyear icmon $200 aperiod trtan trtpn astday aenday 8 trta trtp $40 aperiodc $10 anycmf1 pmf1 cmf1 $2 ;
  merge adsl(in=b) sv cmf1(in = a rename=(cmdecod=cmdecod_ cmtrt=cmtrt_));
  by usubjid;
  if a;
  CMDECOD=compress(cmdecod_ , "KW");
  CMTRT=compress(cmtrt_ , "KW");

if not missing (astdt) and not missing(trtsdt) then
  ASTDAY = astdt - trtsdt + 1;
if not missing (aendt) and not missing(trtsdt) then
  AENDAY = aendt - trtsdt + 1;

* any meds flag;
if a then anycmf1 = 'Y';
else if b and not a then do;
  anycmf1 = 'N';
end;

ICCDATE=PUT(ICFDT,YMMDD10.);
ICYEAR=SCAN(ICCDATE,1,'-');
ICMON=SCAN(ICCDATE,2,'-');

/* PRIOR CONCOMITANT FLAG */
if anycmf1='Y' then do;

if nmiss(astdt, aendt)=0 then do;
  if astdt lt icfdt and aendt lt icfdt then pmf1 = "Y";else   pmf1="N";
  end;
else if missing(astdt) and ^missing(aendt) then do;
  if aendt lt icfdt then pmf1="Y";else   pmf1="N";end;

/* Month and year */
ELSE IF LENGTH(CMSTDTC)=7 and not missing(aendt)then do;
  IF ((SCAN(CMSTDTC,1,'-')<ICYEAR) OR ((SCAN(CMSTDTC,1,'-')=ICYEAR AND SCAN(CMSTDTC,2,'-')<ICMON))) THEN PMFL='Y';
else pmf1="N";
end;

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/*          Year only */
ELSE IF LENGTH(CMSTDTC)=4 then do;
    if CMSTDTC < ICYEAR THEN PMFL='Y';
    else pmfl="N";
end;
if missing(aendt)and missing(astdt) then PMFL='N';
else if not missing(astdt) and missing (aendt) then PMFL='N';
/* CONCOMITANT FLAG */
if anycmfl='Y' then do;
if nmiss(astdt, aendt)=0 then do;
    if astdt >= icfdt and aendt >= icfdt then cmfl = "Y";else cmfl="N";
end;

    else if missing(astdt) and ^missing(aendt) then do;
        if aendt ge icfdt then cmfl="Y";else cmfl="N";end;
else if not missing(astdt)and ^missing(aendt) then do ;
    if astdt > icfdt then cmfl="Y";else cmfl="N";
end;
/*Month and year*/
ELSE IF LENGTH(CMENDTC)=7 then do;
if ((SCAN(CMENDTC,1,'-') > ICYEAR) or (SCAN(CMENDTC,1,'-')=ICYEAR AND SCAN(CMENDTC,2,'-') GE ICMON)) THEN CMFL='Y';
else cmfl = "N"; end;

/*Year only*/
ELSE IF LENGTH(CMENDTC)=4 then do;
    If CMENDTC > ICYEAR THEN CMFL='Y'; else CMFL='N' ;end;

if missing(aendt)and missing(astdt) then CMFL='Y';
else if not missing(astdt) and missing (aendt) then CMFL='Y';

IF MISSING(PMFL) THEN DO;
    IF CMFL='Y' THEN PMFL='N';
    ELSE IF CMFL='N' THEN PMFL='Y';
END;
IF MISSING(CMFL) THEN DO;
    IF PMFL='Y' THEN CMFL='N';
    ELSE IF PMFL='N' THEN CMFL='Y';
END;

end;
end;
IF CMFL='Y' AND PMFL='Y' THEN PUT "WA" "RNING: CMFL and PMFL both = Y. This is incorrect, please check." USUBJID=;
IF CMFL='N' AND PMFL='N' THEN PUT "WA" "RNING: CMFL and PMFL both = N. This is incorrect, please check." USUBJID=;

IF ANYCMFL='Y' THEN DO;
    APERIOD=1;
    APERIODC = 'Period '||put(aperiod,1.);
END;

if upcase(cmenrtpt)="ONGOING" and missing(CMENDTC) then cmongfl="Y";
else cmongfl="N";

if aenum ne "" then DUEAEFL ="Y";
else DUEAEFL ="N";
if mhnum ne "" then DUEMHFL ="Y";
else DUEMHFL ="N";

if aperiod=1 then do;
    TRTP= TRT01p;
    TRTPN=trt01pn;
    TRTA=trt01a;
    trtan=trt01an;
end;
cmspid1=input(cmspid, best.);
if siteid='DAL' then site=3;
else if siteid='DAY' then site=4;
run;
* check or excluded medications ;
*****;

proc import
    datafile="/cvn/projects/prj/data/000000106343/source/bannedmeds_14Apr2015.xlsx"
    out=medlist(keep=subject sitenumber RecordPosition cmtrt cyp1a2 cyp2a6 _11_DTX_B2 VAR28 )
    replace

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        dbms=xlslx;
        datarow=2;
        getnames=yes;
run;

proc sort data = medlist( rename=(cyp1a2=cyp1a2_ cyp2a6=cyp2a6_ _11_DTX_B2=_11_DTX_B2_ var28=half-life)) out= med ;
  by cmtrt cyp1a2_ cyp2a6_ _11_DTX_B2_ half-life;
run;

data med1 (drop=cyp1a2_ cyp2a6_ _11_DTX_B2_ cmtrt) ;
length site 5 ;
set med;
/*CMDECOD=compress(cmtrt_pt,,"KA");*/
/*CMDECOD=compress(cmtrt_pt, , 'KW');*/
CMTRT1=compress(cmtrt, , 'KW');
cyp1a2=compress(cyp1a2_, , 'KW');
cyp2a6=compress(cyp2a6_, , 'KW');
_11_DTX_B2=compress(_11_DTX_B2_, , 'KW');

if Sitenumber='DAL' then site=3;
else if sitenumber='DAY' then site=4;

run;
/**/
/*proc sort data=med1 nodupkey dupout=dups; by cmtrt1 cyp1a2 cyp2a6 _11_DTX_B2 HALFLIFE; run;*/
/**/
/*proc sort data=slcm/(keep=cmtrt subjdn cmspid1 site usubjid)*/;
/*by cmtrt ;*/
/*run;*/

Proc sql;
  create table cma as
select a.*, r1.cyp1a2, r1.cyp2a6, r1._11_DTX_B2,r1.half-life from slcm as a left join med1 as r1 on a.cmtrt=r1.cmtrt1 and a.subjid=r
1.subject and a.site =r1.site and a.cmspid1=r1.RecordPosition
order by cmtrt ;
quit;

data cma;
set cma;
length CRIT1FL CRIT2FL CRIT3FL $2 CRIT1 CRIT2 CRIT3 $200;
CRIT1 = 'Affects CYP2A6';
if strip(CYP2A6) ="Y" then CRIT1FL="Y" ;
else CRIT1FL="N" ;

CRIT2= 'Affects CYP1A2';
if strip(CYP1A2) ="Y" then CRIT2FL="Y" ;
else CRIT2FL="N" ;

CRIT3='Affects 11-DTX-B2';
if strip(_11_DTX_B2)="Y" then CRIT3FL="Y" ;
else CRIT3FL="N" ;

run;

Data SV_1(keep=STUDYID USUBJID SVSTDTC rename=(SVSTDTC=confinedt));
set sdtm.SV(where=(visit="DAY 6/DISCHARGE CONFINEMENT"));
run;

Data SV_2(keep=STUDYID USUBJID SVSTDTC rename=(SVSTDTC=dischargedt));
set sdtm.SV(where=(visit="DAY 91/DISCHARGE AMBULATORY"));
run;

Proc sql;
  create table cma1 as select l.*, r1.confinedt, r2.dischargedt from cma as l left join SV_1 as r1 on l.STUDYID=r1.STUDYID and l.US
BJID=r1.USUBJID
left join SV_2 as r2 on l.STUDYID=r2.STUDYID and l.US
UBJID=r2.USUBJID;
quit;

Data cma2(drop=confinedt dischargedt);
set cma1;
condt=input(confinedt,yymmdd10.);
disdt=input(dischargedt,yymmdd10.);
format condt disdt date9.;
/* if .z <ASTDT<=RANDDT then ASPERC = 'Pre-Randomization Period';*/

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/* else if      .z <RANDDT<ASTDT<=condt then ASPERC = 'Confinement Period';*/
/* else if      .z <condt<ASTDT<=disdt then ASPERC = 'Ambulatory Period';*/
/* else if .z <disdt<ASTDT                then ASPERC = 'Safety Follow-up Period';*/
/**/
/* if ASPERC = 'Pre-Randomization Period' then ASPER=1;*/
/* else if ASPERC = 'Confinement Period' then ASPER=2;*/
/* else if ASPERC = 'Ambulatory Period' then ASPER=3;*/
/* else if ASPERC = 'Safety Follow-up Period' then ASPER=4;*/
if trtptn ne 99 then do;
    if (.< ASTDT <= RANDDT) or missing(randdt) then do; ASPERC = 'Pre-Randomization Period';end;

    else if (randdt ne . and RANDDT< ASTDT<= condt) and condt ne . then do;ASPERC = 'Confinement Period';end;
else if (condt < ASTDT <= disdt) and condt ne . and disdt ne . then do; ASPERC = 'Ambulatory Period';end;
else if .z < disdt < ASTDT                then ASPERC = 'Safety Follow-up Period';

    cmst=input(scan(cmstdtc, 1,'-'),5.);
    cmet=input(scan(cmendtc, 1,'-'),5.);
if missing(astdt) and not missing(randdt) then do; ;
if cmst < year(randdt) then asperc= 'Pre-Randomization Period';;
if cmst = year(randdt) then do;
    if input(cmendtc,yyymmdd10.) < randdt then asperc= 'Pre-Randomization Period';;
end;
end;

    if ASPERC = 'Pre-Randomization Period' then ASPER=1;
    else if ASPERC = 'Confinement Period' then ASPER=2;
    else if ASPERC = 'Ambulatory Period' then ASPER=3;
    else if ASPERC = 'Safety Follow-up Period' then ASPER=4;
end;
run;
*****;
* check tie up with AE ;
*****;

/*data chkcm(keep = subjdn chkae cmtrt cmindc cmstdtc cmendtc);*/
/* set cma2(where = (not missing(aenum)));*/
/* chkae = input(aenum,best.);*/
/*run;*/
/**/
/*proc sort data = chkcm;*/
/* by subjdn chkae;*/
/*run;*/
/**/
/*data chkae(keep = subjdn aeterm aestdte aeendtc chkae TRTEMFL); */
/* set adam.adae(where = (anl04f1 = 'Y'));*/
/* chkae=input(aespid,best.);*/
/*run;*/
/**/
/*proc sort data = chkae;*/
/* by subjdn chkae;*/
/*run;*/
/**/
/*data chkcm(ae=TRTEMFL);*/
/* merge chkae(in = a) chkcm(in = b);*/
/* by subjdn chkae;*/
/* if a and not b then put 'USER WARN' 'ING: AE states meds taken but none in CM: ' subjdn = chkae= aeterm = aestdte = aeendtc =;
*/
/*run;*/

data adcm;
set cma2;

run;

%m_attrib_adam(dset=ADCM);

proc sort data = adcm out = adam.adcm(label= 'Concomitant Medication Analysis Dataset');
by usubjid cmdecod cmtrt cmstdtc cmcat cmindc;
run;

%m_logchk;

/*proc compare base = adam.adcm compare = qadam.qadcm listobs listvar;*/
/*/* id usubjid cmdecod cmtrt cmstdtc cmcat cmindc;*/*/
/*run;*/

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