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/*=====
| Covance Study Number      : 000000106343      |
| Program Name              : d_adpe.sas         |
| Purpose                   : Create ADPE dataset |
| Input Data                : SDTM.PE SDTM.SUPPPE ADAM.ADSL |
|
| Output Data               : ADAM.ADPE          |
|
| Macros Called             : m_printto, m_logchk, m_attrib_adam |
| Originally Performed by   : kpothuri          |
| Date                     : 16March2015        |
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|=====
| Modification History
|-----
| Modified by              : kpothuri
| Modification Date       : 5/26/15
| Modification Description : ABLFL derivation, ANL01FL flagged at baseline, shift1 derivation
|
+=====*/

options validvarname=upcase; options symbolgen mprint mlogic;

options missing="";

libname sdtm "/cvn/projects/prj/data/000000106343/datasets/sdtm/sdtmx";

%m_printto(route=YES);

*****;
* bring in ADSL ;
*****;
data adsl;
  set adam.adsl;
  drop studyid;
run;
proc sort data=adsl; by usubjid; run;

*****;
* pick up SUPPPE ;
*****;
data SUPPPE;
  set sdtm.supppe;

/*PECLSIG*/
if QNAM="PECLSIG" then do;
  PECLSIG=QVAL;
  peseq=input(idvarval,best.);
  output;
end;

keep usubjid idvarval PECLSIG peseq;
run;

*****;
* bring in PE ;
*****;
proc sort data=sdtm.pe out=pe;
  by usubjid peseq;
run;

%macro paramcd (PECD=, PAR=, PARAM=);
  if PETESTCD="&PECD" then do;
    if PESTAT='NOT DONE' then AVALC='Not Examined';
    else if PESTRESC='NORMAL' then AVALC='Normal';
    else if not missing (PESTRESC) then AVALC='Abnormal';
    PARAMN=&PAR;
    PARAMCD="&PARAM";
    PARAM=PETEST;
    output;
  end;
%mend paramcd;

%macro paramcd1 (PECD=, PAR=, PARAM=, COND=);
  if PETESTCD="&PECD" and &COND then do;
    if PESTAT='NOT DONE' then AVALC='Not Examined';
    else if PESTRESC='NORMAL' then AVALC='Normal';
    else if not missing (PESTRESC) then AVALC='Abnormal';
  end;

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PARAMN=&PAR;
PARAMCD="&PARAM";
PARAM=PETEST;
output;
end;
%mend paramcd1;

%macro paramcd2 (PECD=, PAR=, PARAM=);
if PETESTCD="&PECD" and SCAN(PESTRESC,2,"-") not in ('EXTREMITIES', 'LYMPH NODES', 'LYMPHATIC SYSTEM', 'VASCULAR') then do;
if PESTAT='NOT DONE' then AVALC='Not Examined';
else if PESTRESC='NORMAL' then AVALC='Normal';
else if not missing (PESTRESC) then AVALC='Abnormal';
PARAMN=&PAR;
PARAMCD="&PARAM";
PARAM=PETEST;
output;
end;
%mend paramcd2;

data PE1;
set PE;
%paramcd (PECD=GAPPEAR, PAR=1, PARAM=GAPPEAR);
%paramcd (PECD=HEENT, PAR=2, PARAM=HEENT);
%paramcd (PECD=THYROID, PAR=3, PARAM=THYROID);
%paramcd (PECD=HEART, PAR=4, PARAM=HEART);
%paramcd1 (PECD=CHEST, PAR=5, PARAM=CHEST, COND=%str(PECAT ne 'CHEST X-RAY'));
%paramcd (PECD=LUNGS, PAR=6, PARAM=LUNGS);
%paramcd (PECD=BACK, PAR=11, PARAM=BACK);
%paramcd (PECD=CVS, PAR=8, PARAM=CVS);
%paramcd (PECD=GASTRO, PAR=7, PARAM=GASTRO);
%paramcd (PECD=NEURO, PAR=9, PARAM=NEURO);
%paramcd (PECD=ABDOMEN, PAR=13, PARAM=ABDOMEN);
%paramcd (PECD=SKIN, PAR=10, PARAM=SKIN);
%paramcd (PECD=DENTN, PAR=14, PARAM=DENTN);
%paramcd (PECD=MUSCULO, PAR=12, PARAM=MUSCULO);
%paramcd1 (PECD=OTHER, PAR=16, PARAM=OTHEXTRM, COND=%str(SCAN(PESTRESC,2,"-") = "EXTREMITIES"));
%paramcd1 (PECD=OTHER, PAR=17, PARAM=OTHLYMN, COND=%str(SCAN(PESTRESC,2,"-") = "LYMPH NODES"));
%paramcd1 (PECD=OTHER, PAR=18, PARAM=OTHLYMS, COND=%str(SCAN(PESTRESC,2,"-") = "LYMPHATIC SYSTEM"));
%paramcd1 (PECD=OTHER, PAR=19, PARAM=OTHVASC, COND=%str(SCAN(PESTRESC,2,"-") = "VASCULAR"));
%paramcd2 (PECD=OTHER, PAR=15, PARAM=OTHER);

if PECAT='CHEST X-RAY' then do;
PARAMN=20;
PARAMCD='CHESTX';
PARAM='Chest X-ray';
if PESTRESC='NORMAL' then AVALC='Normal';
else if not missing (PESTRESC) then AVALC='Abnormal';
output;
end;
else if petestcd='PEALL' then do;
PARAMN=99;
PARAMCD='PEALL';
PARAM='All Physical Examination Tests';
output;
end;
run;

data pe2;
length DESC $200;
set pe1;

/*DESC*/
if PESTRESC='NORMAL' then DESC = '';
else DESC=left(trim(propcase(tranwrd(pestresc,'ABNORMAL - ',''))));

*Dates;
if not missing(pedtc) then adt = input(pedtc,yyymmdd10.);
format adt date9.;

/*Aperiod, Aperiodc*/
/* aperiod=1;*/
/* if not missing(aperiod) then do;*/
/* aperiodc = 'Period ' || put(aperiod,1.);*/
/* end;*/
run;

*****;
* Combine PE and SUPPPE data *;

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*****;
proc sort data=pe2; by usubjid pseq; run;
proc sort data=suppe; by usubjid pseq; run;
data pe_supp (drop=PESPID PECLSIG rename=(PESPID_=PESPID PECLSIG_=PECLSIG));
length PESPID_ $2 PECLSIG_ $3;
merge pe2 suppe;
by usubjid pseq;
PESPID_=PESPID;
PECLSIG_=PECLSIG;
run;

data pe3;
length AVISIT $40;
merge adsl pe_supp(in=a);
by usubjid;
if a;

/*ADAY*/
if not missing (adt) and not missing (trtsdt) then aday = adt - trtsdt + 1;

*Visits;
if find(DISCCAT,"Discontinued", 'I')>0 and visit = "DAY 91/DISCHARGE AMBULATORY" then do;
if 7<ADAY<31 then do;
AVISIT="DAY 30";
AVISITN=130;
ATPT="";
ATPTN=.;
end;
else if 32<ADAY<61 then do;
AVISIT="DAY 60";
AVISITN=160;
ATPT="";
ATPTN=.;
end;
else do;
AVISIT=VISIT;
AVISITN=VISITNUM;
end;
end;
else do;
AVISIT=VISIT;
AVISITN=VISITNUM;
end;

/*TRT:*/
TRTP=TRT01P;
TRTPN=TRT01PN;
TRTA=TRT01A;
TRTAN=TRT01AN;
run;

*ablfl;
proc sort data=pe3; by paramcd usubjid avisitn adt; run;
data base1 base2 base2_;
set pe3;
by paramcd usubjid avisitn adt;
if armcd in ("MCC", "THS 2.2M", "SMABST") then do;
if not missing(adt) and adt<trtsdt and PESTAT ne "NOT DONE" and INDEX(UPCASE(AVISIT),'UNSCHEDULED') = 0 then do;
ablfl_="Y";
output base1;
end;
else output base2;
end;
else do;
output base2_;
end;
run;
data base3;
set base1;
by paramcd usubjid avisitn adt;

if last.usubjid then ablfl="Y";
run;
data ablfl;
set base2 base2_ base3;
run;

/* Obtain Baselines*/

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data BASE (rename=(adt=adt_ avalc=basec));
  set ablfl;
  where ABLFL='Y' and INDEX(UPCASE(AVISIT),'UNSCHEDULED') = 0;
  keep usubjid paramcd adt avalc;
run;
proc sort data=BASE; by usubjid paramcd; run;
proc sort data=ablfl; by usubjid paramcd; run;
data new;
  merge ablfl BASE;
  by usubjid paramcd;
run;
data pe4;
  set new;
  if ADT<ADT_ then BASEC="";
  else if pestat="NOT DONE" then BASEC="";
run;

PROC SORT DATA=pe4; BY USUBJID PARAMN AVISITN ADT; RUN;
data pe5 pe6;
  set pe4;
  if pestat="NOT DONE" then output pe5;
  else output pe6;
run;
DATA pe7;
  SET pe6;
  BY USUBJID PARAMN AVISITN ADT;

/*ANL01FL*/
if adt_ ne . and adt>=adt_ and last.avisitn then ANL01FL = "Y";
else if TRTSDT ne . and adt>=TRTSDT and last.avisitn then ANL01FL = "Y";

if INDEX(UPCASE(AVISIT),'UNSCHEDULED') ^= 0 then ANL01FL='';
RUN;

/*Shift1*/
data shift (rename=(peclsig=clig_base));
  set pe7;
  where ablfl="Y";

  keep usubjid paramcd peclsig;
run;
proc sort data=shift; by usubjid paramcd; run;
proc sort data=pe7; by usubjid paramcd; run;
data shift_1;
  merge shift pe7;
  by usubjid paramcd;
run;

data shift_2;
  set shift_1;
  if ADT > ADT_ and avalc ne "" and basec ne "" then do;
    if basec="Abnormal" and avalc="Abnormal" then shift1 = trim(basec) || ', ' || trim(PECLSIG) || ' to ' ||trim(avalc) || ', ' ||
trim(PECLSIG);
    else if clig_base ne "" and basec="Abnormal" then shift1 = trim(basec) || ', ' || trim(clig_base) || ' to ' ||trim(avalc);
    else if avalc="Normal" and basec="Normal" then shift1 = trim(basec) || ' to ' ||trim(avalc);
    else if not missing(PECLSIG) then shift1 = trim(basec) || ' to ' ||trim(avalc) || ', ' || trim(PECLSIG);
  end;
run;
data comb;
  set pe5 shift_2;
run;

*****;
* create output dataset ;
*****;

*options replace;

data ADPE /*(drop=PEREASND EPOCH PECAT
/*rename=(PEREASND_=PEREASND EPOCH_=EPOCH PECAT_=PECAT))*/;;
  set comb;
  /*length PEREASND_ $60 EPOCH_ $23 PECAT_ $11;*/
  AVAL = .;
  BASE = .;
  AVISIT=propcase(avisit);

/* PEREASND_=PEREASND;*/
/* EPOCH_=EPOCH;*/

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/* PECAT_=PECAT;*/  
run;  
  
%m_attrib_adam(dset=ADPE);  
  
proc sort data=ADPE out=adam.adpe(label = 'Physical Examination Analysis Dataset');  
  BY USUBJID AVISITN PARAMCD PESPID;  
run;  
  
*options noreplace;  
  
*proc printto; *run;  
  
%m_logchk;
```