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options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
* macro to save output and log to appropriate areas ;
%_mprintto;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106324;
%put NOTE: Client Protocol ID : ZRHR-REXC-03-EU;
%put NOTE: Program Name : d_2ADEX.sas;
%put NOTE: Purpose : create ADEX dataset;
%put NOTE: ;
%put NOTE: Input Data : STDLIB.ADEX SDTM.EX ADAM.ADSL;
%put NOTE: Output : ADAM.ADEX;
%put NOTE: Macros Called : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by : cvn_smulholl;
%put NOTE: Creation Date : 2013-09-25;
%put NOTE: SAS Version : 9.3;
%put NOTE: ;
%put NOTE: == Latest Run
=====;
%put NOTE: Run by : &sysuserid;
%put NOTE: Date/Time :
%sysfunc(putn(%sysfunc(date()),e8601da.))T%sysfunc(putn(%sysfunc(time()),
e86011z.));
%put NOTE: ;
%put NOTE: == Modification History
=====;
%put NOTE: Date Initials No. Reason;
%put NOTE: 02Dec2013 SM 1) Remove VISIT: variables;
%put NOTE: 30Apr2014 KB 2) Added DESC and removed EXTRT from
keep;
%put NOTE: 30Apr2014 KB 3) Amended sorting by key variables;
%put NOTE: 14May2014 KB 4) Removed EXSTDY and EXENDY for
derived parameters;
%put NOTE: 14May2014 KB 5) Amended sorting by key variables;
%put NOTE: 14May2014 KB 6) Added TRTSTMF and TRTETMF;
%put NOTE: 14May2014 KB 7) Amended spelling of conventional;
%put NOTE: 14May2014 KB 8) Amended derivation of AENDT;
%put NOTE: 15May2014 KB 9) Removed error from log;
%put NOTE: 27May2014 KB 10) Added EPOCH to keep;
%put NOTE: 23Jul2014 ZUH 11) Removed EXSPID from key variables
as it does not exist in ADEX anymore;
%put NOTE: 27Jul2014 KB 12) Added EXNOTRFL;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

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

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

data adsl;
    set adam.adsl;
    keep studyid usubjid subjid: siteid age sex: race height weightb1
bmi ucpdgr: nicogr: targr: cobl
        enrfl scrfl safl fasfl pprotfl randfl trt01: tr01:
trtsdtm trtsdt trtsday
        trtedtm trtedt trteday dthfl enfl EXNOTRFL exfl complfl
fupfl TRTSTMF TRTETMF; /* 6) KB 14May2014 */ /* 12) KB 27Jul2014 */
run;

*****;
* bring in EX ;
*****;

data ex;
    set sdtm.ex(where = (not missing(exstdtc)));
    format param $100. aval avisitn 8. avalu $20. paramcd $8. avisit
$40. astdtm aendtm datetime13.
        astdt aendt date9. DESC $200.; /* 2) KB 30Apr2014 */
    param = trim(excat);
    paramcd = 'CC';
    aval = exdose;
    avalu = trim(exdosu);
    avisitn = visitnum;
    avisit = propcase(visit);

    DESC=STRIP(EXTRT); /* 2) KB 30Apr2014 */

    if not missing(exstdtc) and length(exstdtc) gt 10 then astdtm =
input(scan(exstdtc,1,'T'),yymmdd10.)*86400+input(scan(exstdtc,2,'T'),time
5.)/*input(exstdtc,e8601dt.)*;/;
    if not missing(astdtm) then astdt = datepart(astdtm);
    else if missing(astdtm) and length(exstdtc) = 10 then astdt =
input(exstdtc,yymmdd10.);
    if not missing(exendtc) and length(exendtc) gt /*10*/13 then aendtm
=
input(scan(exendtc,1,'T'),yymmdd10.)*86400+input(scan(exendtc,2,'T'),time
5.)/*input(exendtc,e8601dt.)*;/; /* 9) KB 15May2014 */
    if not missing(aendtm) then aendt = datepart(aendtm);
    else if missing(aendtm) and length(exendtc) = 10 then aendt =
input(exendtc,yymmdd10.);
    ELSE IF MISSING(AENDTM) AND LENGTH(EXENDTC)>4 THEN
AENDT=INPUT(EXENDTC,YMMDD10.); /* 8) KB 14May2014 */
    keep usubjid exseq /*extrt exspid*/ param: aval avalu visitnum
visit exstdtc exendtc exstdy exendy avisit: /* 2) KB 30Apr2014 */
        astdt: aend: DESC EPOCH; /* 2) KB 30Apr2014 */ /* 10) KB
27May2014 */
run;

*****;

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* Calculate number of items smoked per day ;
*****;

proc sort data = ex;
    by usubjid avisitn avisit;
run;

proc summary data = ex noprint;
    var aval astdtm aendtm;
    by usubjid avisitn avisit;
    id aendtm astdtm visit visitnum exstdy exendy;
    output out = sumex (drop = _:)          sum = aval;
    output out = times (drop = _:)          min(asterdtm) = asterdtm
    max(aendtm) = aendtm;
run;

data ex2;
    merge sumex times;
    by usubjid avisitn avisit;
    format paramcd $8. param $100. paramtyp $10. dtype $20. avalu $20.;
    paramcd = 'DCC';
/*    param = 'Daily Coventional Cigarette Administration';*/
    param = 'Daily Conventional Cigarette Administration'; /* 7) KB
14May2014 */
    paramtyp = 'DERIVED';
    dtype = 'SUM';
    avalu = 'CIGARETTES/DAY';
run;

data ex3;
    set ex ex2;
    by usubjid avisitn avisit;
run;

*****;
* Combine ADSL nd DX data *;
*****;
* find period;
*_mtotper;

data slex(drop = trt01: tr01: VISIT:); /* 1) SM 02Dec2013 */
    merge adsl ex3(in = a);
    by usubjid;
    if a;          * only include subjects with EX data ;
    format astday aperiod trtan trtpn 8. trta trtp $40. aperiodc $10.;
    astday = astdtm - trtsdt + 1;
    * allocate treatment / period ;
    *_mperall(dvar1 = astdtm, dvar2 = astdtm);
    aperiodc = 'Period ' || put(aperiod,1.);

/* 4) START KB 14May2014 */
    IF PARAMCD='DCC' THEN DO;
        EXENDY=.;
        EXSTDY=.;

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        END;
/* 4) END KB 14May2014 */
run;

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

options replace;

data adex;
    set stdlib.adex slex;
    label aperiodc = 'Period (C)';
run;

proc sort data = adex out = adam.adex(label= 'Exposure Analysis
Dataset');
/*    by usubjid avisitn astdtm;*/
/*    BY USUBJID AVISITN PARAMCD EXSTDTC EXENDTC; *//* 3) KB 30Apr2014 */
    BY USUBJID AVISITN PARAMCD EXSTDTC EXENDTC EXSEQ/*EXSPID*/; /* 5)
KB 14May2014 */ /* 11) ZUH 2014-07-23 */
run;

options noreplace;
proc printto; run;
*=====;
* END OF PROGRAM CODE ;
*=====;

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