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    set EX;
    by studyid usubjid EXSTDTC;
    if first.usubjid then output;
run;

Data EX_DT;
    set EX_DT;
    if not missing(exstdt) then do;
        EXST=datepart(EXSTDTC); /*Date for first EXSTDTC*/end;
    format EXST date9.;
run;

Data DX;
    set sdtm.DX(keep=studyid usubjid DXSTDTC);
    if not missing(DXSTDTC) then do;
        DXSTDTC=input(DXSTDTC, B8601DT16.0);
    end;
    proc sort;
    by studyid usubjid DXSTDTC;
run;

Data DX_DT;
    set DX;
    by studyid usubjid DXSTDTC;
    if first.usubjid then output;
run;

Data DX_DT;
    set DX_DT;
    if not missing(DXSTDTC) then
        DXST=datepart(DXSTDTC); /*Date for first DXSTDTC*/
    format DXST date9.;
run;

/*Proc sql;*/
/* create table AE_3 as*/
/* select l.*, r1.EXST, r2.DXST */
/* from AE_2 as l left join EX_DT as r1 on l.studyid=r1.studyid and l.usubjid=r1.usubjid */
/* left join DX_DT as r2 on l.studyid=r2.studyid and l.usubjid=r2.usubjid;*/
/*quit;*/
proc sort data=dx_dt;by usubjid;run;
proc sort data=ex_dt;by usubjid;run;
data ae_3;
    merge ae_2(in=a) /*dx_dt ex_dt*/sdtm.ds(where=(index(dsdecode, "ADVERSE")) keep = usubjid dsdecode);
    by usubjid;
    if a;
run;

/*Check partial AESTDTC*/
Data partial;
    set AE_3;
    if length(strip(AESTDTC))<10 then output;
run;

/* Check if dataset partial has any records*/

/*Derive TRTEMFL*/
Data AE3 (drop=screendt1);
    set AE_3;
    SCREENDT1=put(SCREENDT, yymmdd10.);
    SCYEAR=input(SCAN(SCREENDT1,1,'-'), best.);
    SCMON=input(SCAN(SCREENDT1,2,'-'), best.);

    aeyear=input(SCAN(AESTDTC,1,'-'), best.);
    aemonth= input(SCAN(AESTDTC,2,'-'), best.);

    * product emergent same or after first product use;
    if not missing(aestdct) and not missing (dtestdt) then do;
        if input(AESTDTC, IS8601DA.) ge dtestdt then trtemfl = 'Y';
    else trtemfl = 'N';
    end;
    /* Month and year */
    else if length(AESTDTC) = 7 then do;
        if aeyear gt scyear or (aeyear = scyear and aemonth ge scomon) then trtemfl = "Y";
        else trtemfl = "N";
    end;
/* IF LENGTH(AESTDTC)=7 AND ((SCAN(AESTDTC,1,'-') > SCYEAR) OR ((SCAN(AESTDTC,1,'-')=SCYEAR AND SCAN(AESTDTC,2,'-') > SCMON))) THEN
TRTEMFL='Y';*/

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/* ELSE TRTEMFL="N"; */
/* end;*/
else if aeterm ne "" then trtemfl = "N";

if TRTEMFL="Y" then do;
  if SAFBFL='Y' or SAFAFL='Y' then ANL01FL="Y";
end;
if TRTEMFL="Y" then do;
if SAFBFL='Y' or SAFAFL='Y' then do;
/* if AEACN0TH = "DISCONTINUED STUDY" then ANL02FL="Y";*/
if index(AEACN0TH, 'DISCONTINUED') then ANL02FL="Y";
end;
end;
run;

data suppa01;
set sdtm.suppa01;

if idvar ne "AESEQ" then put "WAR" "NING: Unexpected value " qnam= idvar=;
aeseq = input(idvarval, best.);

run;

proc sort data = suppa01;
by usubjid aeseq;
run;

proc transpose data = suppa01 out = suppa02;
by usubjid aeseq;
var qval;
id qnam;
idlabel qlabel;
run;
proc sort data=suppa02 ;by usubjid aeseq;run;
proc sort data=ae3 ;by usubjid aeseq;run;

Data AE4;
length aeacnp1 $24 aerelsp $14 aeexpec $14;
merge AE3 suppa02(rename=(aeacnp1=aeacnp1_ aeexpec=aeexpec_ aerelsp=aerelsp_ ));
by usubjid aeseq;
aeacnp1=aeacnp1_;
aeexpec=aeexpec_;
aerelsp=aerelsp_;
if aeacnp1 = "PRODUCT USE INTERRUPTED" then aeacnp1n = 1;
else if aeacnp1 = "PRODUCT USE REDUCED" then aeacnp1n = 2;
else if aeacnp1 = "PRODUCT USE STOPPED" then aeacnp1n = 3;
else if aeacnp1 = "NOT APPLICABLE" then aeacnp1n = 4;
else if aeacnp1 = "NONE" then aeacnp1n = 5;

if aeout = "DEATH RELATED TO ADVERSE EVENT" then aeoutn = 1;
else if aeout = "NOT RECOVERED/NOT RESOLVED" then aeoutn = 2;
else if aeout = "RECOVERED/RESOLVED" then aeoutn = 3;
else if aeout = "RECOVERED/RESOLVED WITH SEQUELAE" then aeoutn = 4;
else if aeout = "RECOVERING/RESOLVING" then aeoutn = 5;
else if aeout = "UNKNOWN" then aeoutn = 6;

if length(aestdct) gt 10 then ASTDT = input(scan(aestdct,1,'T'),ymmdd10.);
else if length(aestdct) = 10 then ASTDT = input(aestdct,ymmdd10.);

if length(aeendct) gt 10 then AENDT = input(scan(aeendct,1,'T'),ymmdd10.);
else if length(aeendct) = 10 then AENDT = input(aeendct,ymmdd10.);

if ASTDT>.> and TRTSDT>.> then ASTDAY = ASTDT - TRTSDT + 1; else ASTDAY = .;
if AENDT>.> and TRTSDT>.> then AENDAY = AENDT - TRTSDT + 1; else AENDAY = .;
if AENDT>.> and ASTDT>.> then AEDURN = AENDT - ASTDT + 1; else AEDURN = .;
if not missing(aedurn) then AEDURU="Days";

/* Check if any record with AEENRTPT = "ONGOING" and AEENDTC is not missing */
if AEENRTPT = "ONGOING" and AEENDTC = " " then AEONGFL = "Y";
else if AETERM ne " " or length(strip(AESTDTC))>0 then AEONGFL = "N";
else AEONGFL = " ";

if AETERM ne " " or length(strip(AESTDTC))>0 or length(strip(AEENDTC))>0 then ANYAEFL = "Y"; else ANYAEFL = "N";

if aerelspn=1 and (.<ASTDT<DTESTDT) or (.<ASTDT<TRTSDTM) then PREFL='Y';
if SCRFFL="Y" then PREFL='Y';
else PREFL=' ';

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    if AESER = "N" then AESERN = 0; else if AESER = "Y" then AESERN = 1;
        if AESEV = "MILD"      then AESEVN = 1;

else if AESEV = "MODERATE" then AESEVN = 2;
else if AESEV = "SEVERE"   then AESEVN = 3;

if upcase(AEREL) in ("Y" "RELATED") then AERELN = 1;
else if upcase(AEREL) = "NOT RELATED" then AERELN = 0;

/* else if ANYAEFL="Y" then AERELN=0;*/
/* else AERELN=.;*/
if AERELSP = "NOT RELATED" then AERELSPN = 0; else if AERELSP = "RELATED" then AERELSPN = 1;

proc sort;
by USUBJID AESOC AEDECOD DESCENDING AESEVN;
run;
data ae4;
set ae4;
    if TRTEMFL="Y" then do;
if SAFBFL='Y' or SAFAFL='Y' then do;
    if AEACNP1N in (1, 2, 3) then ANL03FL="Y"; else ANL03FL=" ";
    if AECONTRT = 'Y'      then ANL04FL="Y"; else ANL04FL=" ";
    if strip(AEACNOTH) ne " " then ANL05FL="Y"; else ANL05FL=" ";
end;
end;
run;
Data AE5;
set AE4;
by USUBJID AESOC AEDECOD DESCENDING AESEVN;
if trtemfl = 'Y' then do;
    if first.AEDECOD and ANYAEFL="Y" then AOCCPIFL="Y";
end;
run;

Proc sort data=AE5;
by USUBJID AESOC AEDECOD DESCENDING AERELN;
run;

Data AE6;
set AE5;
by USUBJID AESOC AEDECOD DESCENDING AERELN;
if trtemfl = 'Y' then do;
    if first.AEDECOD and ANYAEFL="Y" then AOCCPRFL="Y";
end;
APERIOD = 1;
APERIODC= "Period 1";
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 AE7 as select l.*, r1.confinedt, r2.dischargedt from AE6 as l left join SV_1 as r1 on l.STUDYID=r1.STUDYID and l.USUB
JID=r1.USUBJID
                                left join SV_2 as r2 on l.STUDYID=r2.STUDYID and l.US
UBJID=r2.USUBJID;
quit;

Data AE_7(drop=confinedt dischargedt);
set AE7;
condt=input(confinedt,yymmdd10.);
disdt=input(dischargedt,yymmdd10.);
format condt disdt date9.;
/*      if      .z <ASTDT<=RANDDT      then ASPERC = 'Pre-Randomization Period';*/
/* 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 (.< ASTDT <= RANDDT) or missing(randdt) or ENFL='Y' 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;

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/* else if astdt > condit and disdt = . and condit ne . then do;ASPERC = 'Ambulatory Period';end; */
else if .z < disdt < ASTDT then ASPERC = 'Safety Follow-up Period';

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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;

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if aperiod=1 then do;
  TRTP= TRT01p;
  TRTPN=trt01pn;
  TRTA=trt01a;
  trtan=trt01an;
end;
run;

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*****;
* create output dataset ;
*****;
data adae;
  set ae_7;
run;

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%m_attrib_adam(dset=ADAE);

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proc sort data = adae out = adam.adae(label= 'Adverse Event Analysis Dataset');
  BY USUBJID AETERM AEDECOD AEBODSYS AESTDTC AESPID;
run;

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%m_logchk;

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/**/
/*proc sort data=adam.adae out=p_adae;*/
/*by usubjid aeterm aedecod aebodsys aestdtc aespid;*/
/*proc sort data=qadam.qadae out= q_qadae;*/
/*by usubjid aeterm aedecod aebodsys aestdtc aespid;*/
/*run;*/
/**/
/*proc compare base = p_adae compare = q_qadae listall;*/
/*/* id usubjid aeterm aedecod aebodsys aestdtc aespid;*/*/
/*run;*/

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/*look at subjects ZRHM-REXA-08-US-DAL-2007 and ZRHM-REXA-08-US-DAL-2023*/
/*these AESTDTCs are later than SCREENING DATE*/
/*so these should get 'Y'*/
/*but you have "N"*/
/**/
/*look at subjects ZRHM-REXA-08-US-DAL-2007 and ZRHM-REXA-08-US-DAL-2023*/
/*these AESTDTCs are later than SCREENING DATE*/
/*so these should get 'Y'*/
/*but you have "N"*/

```