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*****************************************************************************************.
** Program Name   : addv.sas                                        **.
** Date Created   : 09Mar2021                                       **.
** Programmer Name : (b) (4), (b) (6)                                    **.
** Purpose        : Create addv dataset                             **.
** Input data     : dv suppdv adsl                                  **.
** Output data    : addv.sas7bdat                                   **.
*****************************************************************************************.
options mprint mlogic symbolgen mprint symbolgen mlogic nocenter missing=" ";

proc datasets library=WORK kill nolist nodetails;
quit;

**Setup the environment**;
%let
oprot=/Volumes/app/cdars/prod/sites/cdars4/prjC459/nda2_unblinded_esub/bla_euaext_esub_sdtm/saseng/cdisc3_0;
%let prot=/Volumes/app/cdars/prod/sites/cdars4/prjC459/nda2_unblinded_esub/euaext_esub_adam/saseng/cdisc3_0;
libname dataprot "&oprot./data" access=readonly;
libname datvprot "&prot./data_vai";

proc printto print="&prot./analysis/esub/output/addv.rpt"
     log="&prot./analysis/esub/logs/addv.log" new;
run;

proc sort data=dataprot.suppdv out=suppdv;
   by usubjid idvarval qnam;
run;

proc transpose data=suppdv out=suppdv1(drop=_NAME_ _LABEL_);
   by usubjid idvarval;
   var qval;
   id qnam;
   idlabel qlabel;
run;

data suppdv1;
   set suppdv1;
   dvseq=input(idvarval, best.);
run;

proc sort;
   by usubjid dvseq;
run;

proc sort data=dataprot.dv out=dv;
   by usubjid dvseq;
run;

data _dv1;
   merge dv suppdv1;
   by usubjid dvseq;

proc sort;
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      by usubjid;
   run;

   proc sort data=datvprot.adsl out=adsl;
      by usubjid;
   run;

   data _dv2;
      merge _dv1(in=a) adsl(in=b);
      by usubjid;

      if a;
   run;

   data _dv3;
      set _dv2;
      format ASTDT date9. aphasdt date9. aphaedt date9.;
      length aphase $40. aperiodc $20.;
      label ASTDT='Analysis Start Date' APHASE='Phase' APERIOD='Period'
         APERIODC='Period (C)' PREFL='Pre-treatment Flag' TRPFL='On Treatment Flag';
      p2dt=min(VAX201DT, unblnddt);

      if dvstdtc ne "" then
         astdt=input(dvstdtc, yymmdd10.);

      if brthdt<=astdt<=(trtsdt-1) then
         do;
            aphase='PRE-TREATMENT';
         end;
      else if (.<trtsdt<=astdt and p2dt=.) or (p2dt ne . and .<trtsdt<=astdt<p2dt)
         then
            do;
            aphase='TREATMENT 01';
         end;
      else if .<p2dt<=astdt<trtedt+365 then
         do;
            aphase='TREATMENT 02';
         end;

      if (trtsdt ne . and .<astdt and p2dt=.) or (trtsdt ne . and p2dt
         ne . and .<astdt<p2dt) then
            do;
            aperiod=1;
            aperiodc='Period 01';
         end;
      else if .<p2dt<=astdt<=trtsdt+365 then
         do;
            aperiod=2;
            aperiodc='Period 02';
         end;

      if astdt<trtsdt then
         prefl='Y';
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```
    if substr(aphase, 1, 9)='TREATMENT' then
        TRPFL='Y';
    else
        TRPFL='N';
run;


data final;
    retain studyid usubjid domain subjid siteid age sex race trtsdt trtedt arm
        armcd actarm actarmcd trt01p trt01a trt01pn trt01an agegr1 agegr1n dvseq
        dvspid dvterm dvterm1 dvdecod epoch actsite desgtor cape dvcat dvstdtc dvstdy
        astdt prefl trpfl randfl phase phasen trtarn trtar trtprn trtpr COHORT
        COHORTN DOSALVL DOSALVLN DOSPLVL DOSPLVLN DS3KFL AGEGR3N AGEGR3 AGEGR4N
        AGEGR4 HIVFL AGETR01 TRTSDTM TRTEDTM TR01SDTM TR01EDTM TR02SDTM TR02EDTM
        VAX101 VAX102 VAX10U VAX201 VAX202 VAX20U VAX20UDT UNBLNDDT MULENRFL RAND1FL;
    set _dv3;
    keep studyid usubjid domain subjid siteid age sex race trtsdt trtedt arm armcd
        actarm actarmcd trt01p trt01a trt01pn trt01an agegr1 agegr1n dvseq dvspid
        dvterm dvterm1 dvdecod epoch actsite desgtor cape dvcat dvstdtc dvstdy astdt
        prefl trpfl randfl phase phasen trtarn trtar trtprn trtpr COHORT COHORTN
        DOSALVL DOSALVLN DOSPLVL DOSPLVLN DS3KFL AGEGR3N AGEGR3 AGEGR4N AGEGR4 HIVFL
        AGETR01 TRTSDTM TRTEDTM TR01SDTM TR01EDTM TR02SDTM TR02EDTM VAX101 VAX102
        VAX10U VAX201 VAX202 VAX20U VAX20UDT UNBLNDDT MULENRFL RAND1FL;
run;
proc sort data=final
        out=datvprot.addv(label='Protocol Deviations Analysis Dataset');
    by USUBJID ASTDT;
run;


proc printto;
run;
```