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%_mprintto;
options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106324;
%put NOTE: Client Protocol ID   : ZRHR-REXC-03-EU;
%put NOTE: Program Name        : t_adv4.sas;
%put NOTE: Purpose              : table of adverse events by preferred
term;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADAE;
%put NOTE: Output               : t_15_2_6_2_3(ae);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_jhardman;
%put NOTE: Creation Date        : 2014-07-24;
%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:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

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

/* Standard - just change the number to match the listing you're working
on. Also change the letters in the*/
/* bracket, eg ccb = current cigarette brands. Make sure to do this at
the top of the code too. */

%let tflno=T_15_02_06_02_03(ae);

/* Standard - leave this */
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));

/* Standard - leave this */
data _null_;
  tmp="%TFL_Part";
  if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");

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        call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;

*****;
* read in data ;
*****;

data adsl;
    set adam.adsl;
    where saffl = 'Y';
    attrib headtext1 length =$200.
                headorder1 length=8.;

    if missing(trt01a) or trt01a='Screen failure' then delete;
    if index(trt01a,'Enroll') then do;
        trt01an=98;
        trt01a='Exposed not randomized';
    end;
    headorder1=trt01an;
    headtext1=trt01a;
    output;
    trt01an=99;
    headorder1=99;
    trt01a='Overall Safety';
    headtext1='Overall Safety';
    output;
run;

data dumtrts; /*Use this to output any columns for which N=0*/
    attrib headtext1 length =$200.
                headorder1 length=8.;
    headorder1=1;
    headtext1='THS 2.2';
    output;
    headorder1=2;
    headtext1='CC';
    output;
    headorder1=3;
    headtext1='SA';
    output;
    headorder1=98;
    headtext1='Exposed not randomized';
    output;
run;

proc freq data=adsl noprint;
    table headorder1*headtext1/ out =tot(drop=percent);
run;

data tot2;
    merge tot(in=a) dumtrts(in=b);
    by headorder1 headtext1;
    if b and not a then count=0;

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        call symput('trt' || compress(put(headorder1,best.)),
compress(count));
run;

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/*Now bring in AE data*/
data ae(drop=aeecod1);
    set adam.adae(rename =(aeecod=aeecod1));
    where saffl='Y' and anyae1='Y' and anl01fl='Y';
    attrib headtext1 length =$200.
                headorder1 length=8.
                aeecod length=$200.;

    aeecod=aeecod1;
    if missing(trta) or trta='Screen failure' then delete;
    if missing(aeecod) then aeecod='Missing';
    if index(trta,'Enroll') then do;
        trtan=98;
        trta='Exposed not randomized';
    end;
    headorder1=trtan;
    headtext1=trta;
    output;
    headorder1=99;
    headtext1='Overall Safety';
    output;
run;

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proc sort data=ae; by headorder1 headtext1; run;

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data adverse02;
    set ae;
run;

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* Create an additional observation with missing VOL value for each table
section;
* This is used to ensure that all table rows are output, even for rows
with no adverse events;

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data adverse03;
    set adverse02;
    output;
    aeecod='Any Adverse events';
    output;
run;

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/** Number of Ae's overall **/
proc freq data=adverse03 noprint;
    tables headorder1*headtext1*aeecod / out=ovall(rename=(count=tot)
drop=percent);
run;

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/** getting number of subjects studied ***/
proc sort data=adverse03 out=nae3 nodupkey;
    by headorder1 headtext1 aeecod subjidn;

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run;

proc freq data=nae3 noprint;
  tables headorder1*headtext1*aedecod/ out=novall(rename=(count=ntot)
drop=percent);
run;

data otot;
  merge ovall novall;
  by headorder1 headtext1 aedecod;
run;

/** number of subjects and aes in overall **/
data overall;
  set otot;
  if aedecod='Any Adverse events' then sort2=1;
  else sort2=2;
  sort3=0;
run;

data body2;
  set overall;
  if aedecod='Any Adverse events' then do; sort2=1; sort3=0;
end;
  else do; sort2=2; sort3=0; end;
run;

data all;
  set body2;
run;

proc sort data=all out=all2;
  by headorder1 headtext1 sort2 aedecod;
run;

data format;
  merge all2(in=a) dumtrts tot;
  by headorder1 headtext1;
  if not a then do;
    sort2=1;
    sort3=0;
    aedecod='Any Adverse events';
  end;
run;

data format2;
  set format;
  attrib text text2 text3 format=$200.;
  /* Percentage of subjects*/
  if not missing(count) then percent=put((ntot/count)*100,8.1);
  else percent='0';

  /*n value*/

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        if missing(ntot) then text='0';
        else text=put(ntot,3.);

        /*% value*/
        if missing(percent) then text3='';
        else if percent=100 then text3='(100  %)';
        else if percent ge 10 then text3='(
'||compress(put(percent,8.1))||'%)';
        else if percent lt 10 then text3='(
'||compress(put(percent,8.1))||'%)';

        /*events value*/
        if missing(tot) then text2='';
        else text2=compress(put(tot,3.));

        drop percent;

run;

        proc sort data=format2 nodupkey; by headorder1 headtext1 aedecod
tot ntot sort2 sort3 count text text3 text2; run;

        proc sort data=format2; by headorder1 headtext1 sort2 aedecod sort3 ;
run;

        proc sort data=format2 out=format3; by sort2 aedecod sort3 ; run;

/*Transpose n values*/
proc transpose data=format3 out=nformat prefix=n;
  by sort2 aedecod sort3;
  var text;
  id headorder1;
  idlabel headtext1;
run;

/*Transpose % values*/
proc transpose data=format3 out=performat prefix=p;
  by sort2 aedecod sort3;
  var text3;
  id headorder1;
  idlabel headtext1;
run;

/*Transpose events values*/
proc transpose data=format3 out=eformat prefix=e;
  by sort2 aedecod sort3 ;
  var text2;
  id headorder1;
  idlabel headtext1;
run;

        data tformat;
        merge nformat eformat performat;

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        by sort2 aedecod sort3;
        /*Create numeric variables for sorting*/
        n99n=input(n99,8.);
        e99n=input(e99,8.);
run;

/*Sort preferred terms in order of most frequent*/
proc sort data=tformat out=tsort2;
    by sort2 sort3 descending n99n descending e99n;
run;

data sorting;
    set tsort2;
    by sort2 sort3 descending n99n descending e99n aedecod;
    if first.aedecod then odd+1; /*Odd now sorts preferred terms in the
required order*/
run;

data final2;
    set sorting;
    attrib column format=$70.;

    if sort2=2 then column=trim(aedecod);
    else if sort2=1 then do; column='Any adverse events'; end;
run;

proc sort data=final2;
    by sort2 odd;
run;

data labels;
    set final2;
    attrib n1 label = " n"
           n2 label = " n"
           n3 label = " n"
           n98 label = " n"
           n99 label = " n"
           p1 label = '(%)'
           p2 label = '(%)'
           p3 label = '(%)'
           p98 label = '(%)'
           p99 label = '(%)'
           e1 label = "Events"
           e2 label = "Events"
           e3 label = "Events"
           e98 label = "Events"
           e99 label = "Events";
run;

data final4;
    set labels;

    array a [5] n1 n2 n3 n98 n99;

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        array b [5] e1 e2 e3 e98 e99;
        do i=1 to 5;
            if missing(a[i]) then a[i] ='0';
                if length(left(strip(b[i])))=2 then b[i]=
'|S={foreground=white}.|S={}' || left(strip(b[i]));
                if length(left(strip(b[i])))=1 then b[i]=
'|S={foreground=white} .|S={}' || left(strip(b[i]));
            end;
                flag=1;

        run;

proc sql noprint;
    create table table.T_15_02_06_02_03 as
        select column, aedecod, n1, p1, e1, n2, p2, e2, n3, p3, e3, n98,
p98, e98, n99, p99, e99
        from final4
        order by sort2, odd;
quit;

data paging;
    set final4;
    by sort2 odd ;
    if ln gt 13 then ln=1;
    else ln+1;

    if ln=1 then page+1;
    call symput("page",compress(put(page,best.)));
run;

/* Standard - leave this */
options number nodate orientation=landscape papersize=&p_pgsz missing='
';
ods escapechar='|';
%let linetop = \brdrt\brdrs\brdrw30; * needs to be 1.5pt so calculated
in twips (1/20 pt) ;
%let linebot = \brdrb\brdrs\brdrw30;
/* Standard - macro for paging */
%macro outrtf(blankn=70, halfblnk=N);

%if &halfblnk=N %then %let halfblnk=;
%else %if &halfblnk=Y %then %let halfblnk=\~;

ods path stdlib.tl06324 (read) ;
ods results off;
ods rtf toc_data/* contents*/
file="/cvn/projects/prj/data/000000106324/TFL/&TFL_Part./&tflno..rtf"
style=tl06324 startpage=yes headery=1440 footery=1440 ;
ods noproctitle;
%do i=1 %to &page;

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title ;
footnote;
%let wd=0;
ods proclabel = ' ';

data comp;
    set paging end=eof;
    where page=&i;

    /* Amend title as needed */
    _firtitl="Table 15.2.6.2.3 Summary of Adverse Events by
Preferred Term - Safety Population";
    _upcas=(length("Path: &TFLpath.")-
length(compress("Path:&TFLpath.",'ABCDEFGHIJKLMNOPQRSTUVWXYZ')))/2;
    len=&blankn.-length("(page &i of &page)");
    if eof then do;
        call symput('_FSRTITL', trim(left(_firtitl)));
        call symput('_blankn', compress(put(len,best.)));
    end;
    drop _firtitl _upcas len;
run;

ods listing close;

* most set up in template others below;
* title arial 12pt bold with 12pt paragraph space below;
* all headers to be arial 11pt bold;
* data arial 10pt;
* headers to be central, text values left aligned and numeric centered
around decimal point;
/* Update with your variables as needed */
proc report data = comp headline headskip missing nowd split = '$' %if
&i=1 %then %do; contents=' ' %end; %else %do; contents=' ' %end;;
    column flag page sort2 odd column ("THS 2.2 $(N=&trt1) &linebot" n1
p1 e1) ("CC$(N=&trt2) &linebot" n2 p2 e2)

        ("SA $(N=&trt3) &linebot" n3 p3 e3) ("Exposed
Not$Randomized$(N=&trt98) &linebot" n98 p98 e98)

        ("Overall$Safety$(N=&trt99) &linebot" n99 p99 e99); ;
    define flag          / order order = internal noprint;
    define page          / order order = internal noprint;
    define sort2         / order order=internal noprint;
    define odd           / order order=internal noprint;
    define column        / group style={just=left cellwidth=3.4cm}
style(header)={just=center} "Preferred Term";
    define n1            / display style={just=d cellwidth=0.5cm}
style(header)={just=right} ;
    define p1            / display style={just=d cellwidth=1.2cm}
style(header)={just=center} ;

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        define e1                                / display
style={JUST=left cellwidth=1.2cm} style(header)={just=1} ;
        define n2                                / display style={just=d cellwidth=0.5cm}
style(header)={just=right} ;
        define p2                                / display style={just=d cellwidth=1.2cm}
style(header)={just=center} ;
        define e2                                / display style={just=left
cellwidth=1.2cm } style(header)={just=1} ;
        define n3                                / display style={just=d cellwidth=0.5cm}
style(header)={just=right} ;
        define p3                                / display style={just=d cellwidth=1.2cm}
style(header)={just=center} ;
        define e3                                / display
style={just=left cellwidth=1.2cm} style(header)={just=1} ;
        define n98                               / display style={just=d cellwidth=0.5cm}
style(header)={just=right} ;
        define p98                               / display style={just=c cellwidth=1.2cm}
style(header)={just=center} ;
        define e98                               / display style={just=left
cellwidth=1.2cm} style(header)={just=1} ;
        define n99                               / display style={just=d cellwidth=0.5cm}
style(header)={just=right} ;
        define p99                               / display style={just=d cellwidth=1.2cm}
style(header)={just=center} ;
        define e99                               / display style={JUST=left
cellwidth=1.2cm} style(header)={just=1} ;

break before flag / page %if &i=1 %then %do;
contents="&_fsrtitl" %end; %else %do; contents='' %end;;

compute after sort2;
    line " ";
endcomp;

compute before page / style={protectspecialchars=off};;
    line "&linetop";
endcomp;

compute before _page_ / style={just=left protectspecialchars=off};
    line "\b\fs24\sa24&_FSRTITL." ; * \b = bold, \fs24 is font
size 12pt, \sa24 is space after 12pt;

    line "&linebot";
endcomp;

compute after _page_ / style={just=left protectspecialchars=off
pretext="&linetop."};
    line 'Note: CC = Conventional cigarettes; SA = Smoking
abstinence; THS = Tobacco Heating System.';
    LINE 'Note: Exposed Not Randomized refers to all subjects
exposed to THS 2.2 but not randomized. Overall Safety refers to all
subjects exposed to THS 2.2.';
    line 'Note: Percentages are based on the number of subjects
indicated in the column header (N).';

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        line ' ';
        line 'Appendix 15.3.6.1.1';
        line "Path: &TFLpath." &_blankn.*"\~\~" "(Page &i of &page)";
;
        line "Program Run: &sysdate   &sysuserid   Program Status:
&status";
        endcomp;
run;
%end;
ods rtf close;
ods results on;
ods path sashelp.tmplmst (read);

%mend ;

%outrtf(blankn=70, halfblnk=N);
ods listing;
proc printto print = "&table./T_15_02_06_02_03.lst" new;
run;

proc contents data = table.T_15_02_06_02_03 varnum;
run;
ods listing close;

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

```