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%_mprintto;
options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106326;
%put NOTE: Client Protocol ID   : ZRHM-PK-05-JP;
%put NOTE: Program Name        : t_coday2.sas;
%put NOTE: Purpose              : table of exhaled CO during days -1 0 2
4 by sex;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADBX;
%put NOTE: Output               : t_15_2_4_11_1_1(co);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_jriley;
%put NOTE: Creation Date        : 2014-08-08;
%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: 11Aug2014   JR        1) Amended calculation of CI;
%put NOTE: 11Aug2014   JMH       2) Added full stop to NC footnote;
%put NOTE: 12Aug2014   JR        3) Amended NC footnote;
%put NOTE: ;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

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

%let tflno=T_15_02_04_11_01_01(co);

%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));

data _null_;
  tmp="&TFL_Part";
  if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
  call symput('TFLpath', compress("&_SASPROGRAMFILE", ""));
run;

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*****;
* read in data ;
*****;
/*Bring in appropriate data from adbx*/
data adbx;
    set adam.adbx(where=(paramcd='CO' and avisit not in ('Day 1' 'Day
3') and pprotfl='Y' and anl02fl='Y'));/*Used both analysis flags, might
need reviewing*/
run;

/* Calculate totals for products */
/* 1) START KB 24Mar2014 */
DATA ADSLCOPY;
    SET ADAM.ADSL(WHERE=(PPROTFL='Y'));
RUN;
/* 1) END KB 24Mar2014 */

data adsl;
    set adam.adsl(where=(pprotfl='Y'));
    if analgrln=1 then do;
        if trtseqan=1 then trtord=4;
        else if trtseqan=2 then trtord=5;
    end;
    else if analgrln=2 then do;
        if trtseqan=3 then trtord=7;
        else if trtseqan=4 then trtord=10;

    end;
    else if missing(analgrln) then delete;
run;

proc sort data=adsl nodupkey out=adsl1;
    by analgrln analgr1 trtord sexn sexc subjid;
run;

proc freq data=adsl1(where=(not missing(trtord))) noprint;
    table analgrln*analgr1*trtord*TRTSEQA*sexn*sexc/ out
=totals2(drop=percent rename=(count=total));
run;

data totals3;
    set totals2;
    CALL SYMPUT('ATTR'||STRIP(PUT(TRTORD,BEST.)),TRIM(TRTSEQA));
    call
symput('trt'||strip(put(trtord,best.))||strip(put(sexn,best.)),strip(put(
total,best.)));
run;

proc sort data=totals3;
    by analgrln analgr1 trtord sexn;
run;

/* Back to data */
data adbx1;

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merge adbx adslcopy(keep=usubjid trtsega trtsega);
by usubjid;
run;

data adbx_orig;
  set adbx1;
  format timepoint $50. timepointn best.;

  statval=aval;

  if avisit in ('Day 0' 'Day 2') then do;
    timepoint=strip('Washout ' || left(strip(aperiodc)) || ' (' ||
strip(avisit) || ' ' || strip(atpt)||')');
    timepointn=avisitn+(atptn/100);
  end;
  else do;
    timepoint=left(strip(avisit));
    timepointn=avisitn;
  end;

  trtan=trtsega;
  trta=trtsega;
run;

proc sort data=adbx_orig;
  by analgr1n analgr1 trtan trta sexn sexc timepointn timepoint;
run;

proc means data=adbx_orig alpha=0.05 noprint;
  var statval;
  by analgr1n analgr1 trtan trta sexn sexc timepointn timepoint;
  output out=results02 n=n1 mean=mean1 std=std1 median=median1 min=min1
max=max1 q1=q1 q3=q3 lclm=lcl1 uclm=uc1;
run;

data results03;
  set results02;
  attrib meansd length=$20.
    minmax length=$20.
    n length=$20.
    median length=$20.
    ci length=$20.
    quart length=$20.;

  /*AVALC has 0 DP*/
  n = left(compress(put(n1,8.)));
  if not missing(median1) then median =
left(compress(put(round(median1,0.1),8.1)));
  if not missing(mean1) and not missing(std1) then meansd =
left(compress(put(round(mean1,0.1),8.1))) || ' (' ||
left(compress(put(0.01*ceil(std1/0.01),8.2))) || ')';
  if not missing(min1) and not missing(max1) then minmax =
left(compress(put(round(min1,1),8.))) || ', ' ||
left(compress(put(round(max1,1),8.)));

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        if not missing(lcil) and not missing(ucil) then ci =
strip(strip(put(0.1*floor(lcil/0.1),8.1)) || ', ' ||
strip(put(0.1*ceil(ucil/0.1),8.1)));
        if not missing(q1) and not missing(q3) then quart =
strip(strip(put(0.1*floor(q1/0.1),8.1)) || ', ' ||
strip(put(0.1*ceil(q3/0.1),8.1)));

        IF STD1 = 0 THEN CI = 'NC'; /* 1) JR 11Aug2014 */

        drop n1 mean1 std1 median1 min1 max1 lcil ucil q1 q3;
run;

data results04;
    set results03;

    if analgr1n=1 and trtan=1 then trtan=4;
    else if trtan=2 then trtan=5;
    if analgr1n=2 and trtan=4 then trtan=10;
    else if trtan=3 then trtan=7;

    trtord=trtan;

    trtans=strip(strip(put(trtord,best.)) || strip(put(sexn,best.)));
run;

proc sort data=results04;
    by timepointn timepoint;
run;

proc transpose data=results04 out=results05 prefix=_ name=varname;
    by timepointn timepoint;
    var n meansd median minmax ci quart;
    id trtans;
    idlabel trta;
run;

/* Create BLOQ data */
data bloq;
    set adbx_orig(where=(bloqfl='Y') keep=analgr1n analgr1 trtan trta
atptn atpt aval avisit aperiodc avisitn sexn sexc bloqfl);
    format timepoint $50. timepointn best.;

    statval=aval;

    if avisit in ('Day 0' 'Day 2') then do;
        timepoint=strip('Washout ' || left(strip(aperiodc)) || ' (' ||
strip(avisit) || ' ' || strip(atpt)||')');
        timepointn=avisitn+(atptn/100);
    end;
    else do;
        timepoint=left(strip(avisit));
        timepointn=avisitn;
    end;
run;

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proc means data=bloq noprint;
    var statval;
    by analgr1n analgr1 trtan trta sexn sexc timepointn timepoint;
    output out=bloq2 n=n2;
run;

data bloq3;
    set bloq2;
    attrib bloq length=$20.;

    bloq = left(compress(put(n2,8.)));

    drop n2;
run;

data bloq4;
    set bloq3;

    if analgr1n=2 and trtan=4 then trtan=10;
    else if trtan=3 then trtan=7;

    trtord=trtan;

    trtans=strip(strip(put(trtord,best.)) || strip(put(sexn,best.)));
run;

proc sort data=bloq4;
    by timepointn timepoint;
run;

proc transpose data=bloq4 out=bloq5 prefix=_ name=varname;
    by timepointn timepoint;
    var bloq;
    id trtans;
    idlabel trta;
run;

/* Dummy variables as currently there are no BLOQ values */
data bloq6;
    set bloq5;
    format timepoint $50. timepointn best.;

    if timepoint='' and timepointn=. then do;
        timepoint='Day -1';
        timepointn=99;
        output;
        timepoint='Washout Period 1 (Day 0 08:00-09:30 AM)';
        timepointn=101.01;
        output;
        timepoint='Washout Period 1 (Day 0 12:00-01:30 PM)';
        timepointn=101.02;
        output;
        timepoint='Washout Period 1 (Day 0 04:00-05:30 PM)';
    end;

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        timepointn=101.03;
        output;
        timepoint='Washout Period 1 (Day 0 08:00-09:30 PM)';
        timepointn=101.04;
        output;
        timepoint='Washout Period 2 (Day 2 08:00-09:30 AM)';
        timepointn=103.01;
        output;
        timepoint='Washout Period 2 (Day 2 12:00-01:30 PM)';
        timepointn=103.02;
        output;
        timepoint='Washout Period 2 (Day 2 04:00-05:30 PM)';
        timepointn=103.03;
        output;
        timepoint='Washout Period 2 (Day 2 08:00-09:30 PM)';
        timepointn=103.04;
        output;
        timepoint='Day 4/Discharge';
        timepointn=104;
        output;
    end;
run;

/* Set BLOQ data on */
data results05a;
    set results05 bloq6;
run;

data results06;
    set results05a;
    attrib stat length = $100.;

    if varname='N' then do;
        statord=1;
        stat='n';
    end;
    if varname='BLOQ' then delete;
    else if varname='MEANSD' then do;
        statord=3;
        stat='Mean (SD)';
    end;
    else if varname='CI' then do;
        statord=4;
        stat='95% CI';
    end;
    else if varname='MEDIAN' then do;
        statord=5;
        stat='Median';
    end;
    else if varname='QUART' then do;
        statord=6;
        stat='Q25, Q75';
    end;
    else if varname='MINMAX' then do;

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        statord=7;
        stat='Min, Max';
    end;

    drop varname;
run;

data results07;
    set results06;

    if stat='n' or stat='BLOQ - n (%)' then do;
        if missing(_41) then _41='0';
        if missing(_51) then _51='0';
        if missing(_101) then _101='0';
        if missing(_71) then _71='0';
        if missing(_42) then _42='0';
        if missing(_52) then _52='0';
        if missing(_102) then _102='0';
        if missing(_72) then _72='0';
    end;
run;

data labels;
    set results07;
    attrib _41 label = "Males$(N=&trt41)"
           _51 label = "Males$(N=&trt51)"
           _101 label = "Males$(N=&trt101)"
           _71 label = "Males$(N=&trt71)"
           _42 label = "Females$(N=&trt42)"
           _52 label = "Females$(N=&trt52)"
           _102 label = "Females$(N=&trt102)"
           _72 label = "Females$(N=&trt72)";
run;

data labels1;
    set labels;
    analgrln=1;
    output;
    analgrln=2;
    output;
run;

data labels2;
    set labels1;
    if analgrln=1 then do;
        _101=''; _102=''; _71=''; _72='';
    end;
    else if analgrln=2 then do;
        _41=''; _42=''; _51=''; _52='';
    end;
run;

proc sort data=labels2;
    by analgrln timepointn statord;

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run;

proc sql noprint;
    create table table.t_15_02_04_11_01_01 as
    select analgrln, timepoint, stat, _41, _51, _101, _71, _42, _52,
    _102, _72
    from labels2
    order by analgrln, timepointn, statord;
quit;

proc sort data=labels2;
    by analgrln timepointn statord;
run;

data paging;
    set labels2;
    by analgrln timepointn statord;

    flag=1;

    if first.timepointn and ln gt 9 then ln=1; /*Amend to look
presentable, and avoid page overflows*/
    else ln+1;
    if ln=1 then page+1;
    call symput("page",compress(put(page,best.)));

run;

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;
%macro outrtf(blankn=, halfblnk=);

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

ods path stdlib.t106326 (read) ;
ods results off;
ods rtf toc_data
file="/cvn/projects/prj/data/000000106326/TFL/&TFL_Part./&tflno..rtf"
style=t106326 startpage=yes headery=1440 footery=1440 ;
ods noproctitle;
%do i=1 %to &page;
ods proclabel=' ';

    title ;
    footnote;
    %let wd=0;
    %let bloq=0;
    %LET CI=0;

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%LET J=0;

data comp;
  set paging end=eof;
  where page=&i;
    call symput('j',analgrln);
    /* 1) JR 11Aug2014 */
    IF INDEX(STAT,'CI') AND (INDEX(_41,'NC')=1 OR
INDEX(_42,'NC')=1 OR INDEX(_51,'NC')=1 OR INDEX(_52,'NC')=1)
      THEN CALL SYMPUT('CI',1);
    IF INDEX(STAT,'CI') AND (INDEX(_101,'NC')=1 OR
INDEX(_102,'NC')=1 OR INDEX(_71,'NC')=1 OR INDEX(_72,'NC')=1)
      THEN CALL SYMPUT('CI',1);

    if index(stat,'bloq') and (index(_41,'0')=0 or
index(_42,'0')=0 or index(_51,'0')=0 or index(_52,'0')=0)
      then call symput('bloq',1);
    if index(stat,'bloq') and (index(_101,'0')=0 or
index(_102,'0')=0 or index(_71,'0')=0 or index(_72,'0')=0)
      then call symput('bloq',1);

    /* Amend title as needed */
    _firtitl="Table 15.2.4.11.1.1 Descriptive Statistics of Exhaled
CO (ppm) During Days -1, 0, 2 and 4 by Sex - PK";
    _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;
proc report data = comp missing headline headskip missing nowd split
= '$' %if &i=1 /*and &j=1*/ %then %do; contents=' ' %end; %else %do;
contents='' %end;;
  column flag page timepointn timepoint statord stat
  %if &j=1 %then %do; ("Group-1 PK &linebot" ("&ATRT4 &linebot" _41
_42) ("&ATRT5 &linebot" _51 _52)) %end;
  %else %if &j=2 %then %do; ("Group-2 PK &linebot" ("&ATRT7 &linebot"
_71 _72) ("&ATRT10 &linebot" _101 _102)) %end;;
  define flag /order order=internal noprint;

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        define page          / order order = internal noprint;
        define timepointn    / order order=internal noprint;
        define timepoint     / group style={just=left cellwidth=4cm}
style(header)={just=center} "Timepoint";
        define statord       / order order = internal noprint;
        define stat          / display style={just=left cellwidth=1.0cm}
style(header)={just=center} "Statistic";
        %if &j=1 %then %do;
            define _41        / display style={just=center cellwidth=1.5cm}
style(header)={just=center};
            define _42        / display style={just=center cellwidth=1.5cm}
style(header)={just=center};
            define _51        / display style={just=center cellwidth=1.5cm}
style(header)={just=center};
            define _52        / display style={just=center cellwidth=1.5cm}
style(header)={just=center};
        %end;
        %else %if &j=2 %then %do;
            define _101       / display style={just=center cellwidth=1.5cm}
style(header)={just=center};
            define _102       / display style={just=center cellwidth=1.5cm}
style(header)={just=center};
            define _71        / display style={just=center cellwidth=1.5cm}
style(header)={just=center};
            define _72        / display style={just=center cellwidth=1.5cm}
style(header)={just=center};
        %end;

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

break after page / page;

compute after timepointn;
    line " ";
endcomp;

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

compute before _page_ / style={just=left protectspecialchars=off};
    line "\b\fs24\sas24&_FSRTITL." ; * \b = bold, \fs24 is font
size 12pt, \sa24 is space after 12pt;
    line "\b\fs24\sas24Population";
    line "&linebot";
endcomp;

compute after _page_ / style={just=left protectspecialchars=off
PRETEXT="&LINETOP."};
    line 'Note: mCC = menthol conventional cigarettes;
NRT gum = Nicotine Replacement Therapy gum; THS = Tobacco Heating
System.';

%IF &CI=1 %THEN %DO;

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LINE "Note: NC = Not calculated."/*"NC = Not
calculated."*/; /* 1) JR 11Aug2014 */ /* 2) JMH 11Aug2014 */ /* 3) JR
12Aug2014 */
    %END;
    %if &bldq=1 %then %do;
    line "Note: LOQ = ppm";
    %end;
    line ' ';
    line 'Appendix 15.3.3.5';
    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_04_11_01_01.lst" new;
run;

proc contents data = table.T_15_02_04_11_01_01 varnum;
run;
ods listing close;
proc printto ; run;
*=====;
* END OF PROGRAM CODE ;
*=====;

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