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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_cotmc.sas;
%put NOTE: Purpose              : table decriptive stats of time matched
changes co ;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADBX ADAM.ADSL;
%put NOTE: Output               : t_15_2_4_8(co);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_jhardman;
%put NOTE: Creation Date        : 2014-07-29;
%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: 04Aug2014   KB        1) Amended decimal place presentation;
%put NOTE: 29Aug2014   JMH       2) Added NMIS to the proc means to
check for missing data;
%put NOTE: 18Sep2014   KB        3) Amended dual programming table
production to use unformatted ATPT;
%put NOTE: 18Sep2014   KB        4) Amended issue with quartiles
rounding;
%put NOTE: 20Oct2014   KB        5) Amended variable name for dual prog;
%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_08(co);

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

data _null_;

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

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

/*Use ADSL to get N values for column headers*/
data adsl;
    set adam.adsl(where=(fasfl='Y'));
run;

proc sort data=adsl nodupkey out=adsl1;
    by trt01an trt01a subjid;
run;

proc freq data=adsl1(where=(not missing(trt01an))) noprint;
    table trt01an*trt01a/ out =tot(drop=percent rename=(count=total));
run;

data tot2;
    set tot;
    call symput('trt' || compress(put(trt01an,best.)),
compress(total));
run;

/*Bring in appropriate data from ADBX*/
data adbx1;
    set adam.adbx(where=(anl02fl='Y' and fasfl='Y' and paramcd in
('CO') and avisitn gt 100));
    if atpt='08:00-10:00 AM' or avisit='Day 6/Discharge' then delete;    *
has no time match Day 0 for 04 study;
run;

data adbx;
    set adbx1;
run;

data adbx_orig;
    set adbx;
    type='pchg';
    statval=pchg;
run;

proc sort data=adbx_orig;
    by type trtan trta avisitn avisit atptn atpt;
run;

proc means data=adbx_orig noprint;
    var statval;
    by type trtan trta avisitn avisit atptn atpt;

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        output out=results02 NMISS=MISS1 n=n1 mean=mean1 std=std1
median=median1 min=min1 max=max1 q1=q1 q3=q3 lclm=lci1 uclm=uci1; /* 2)
JMH 29Aug2014 */
run;

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

    n = left(compress(put(n1,8.)));
    * differing DP per biomarker ;
    * CO as 0dp;
    if not missing(median1) then median =
left(compress(put(round(median1,/*0.1*/0.01),/*8.1*/8.2))); /* 1) KB
04Aug2014 */
    if not missing(mean1) and not missing(std1) then meansd =
left(compress(put(round(mean1,/*0.1*/0.01),/*8.1*/8.2))) || ' (' ||
left(compress(put(/*0.01*/0.001*ceil(std1/0.001/*0.01*/),/*8.2*/8.3))) ||
')'; /* 1) KB 04Aug2014 */
    if not missing(min1) and not missing(max1) then minmax =
left(compress(put(round(min1,/*1*/0.1),/*8.0*/8.1))) || ', ' ||
left(compress(put(round(max1,/*1*/0.1),/*8.0*/8.1))); /* 1) KB 04Aug2014
*/
    if not missing(lci1) and not missing(uci1) then aci =
strip(put(/*0.1*/0.01*floor(lci1/0.01/*0.1*/),/*8.1*/8.2)) || ', ' ||
strip(put(/*0.1*/0.01*ceil(uci1/0.01/*0.1*/),/*8.1*/8.2)); /* 1) KB
04Aug2014 */
    /*if not missing(q1) and not missing(q3) then quart =
strip(strip(put(round(q1,/*0.1*/0.01),/*8.1*/8.2)) || ', ' ||
strip(put(round(q3,/*0.1*/0.01),/*8.1*/8.2)));*/ /* 1) KB
04Aug2014 */
    IF NOT MISSING(Q1) AND NOT MISSING(Q3) THEN QUART =
STRIP(PUT(0.01*FLOOR(Q1*100),10.2)) || ', ' ||
STRIP(PUT(0.01*CEIL(Q3*100),10.2)); /* 4) KB 18Sep2014 */

    drop n1 mean1 std1 median1 min1 max1 q1 q3 uci1 lci1 ;
run;

/*Obtain subjects with values BLOQ*/
data adbx_blq;
    set adbx;
    where bloqf1='Y';
    statval=aval;
    type='abs';
run;

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proc freq data=adbx_blq noprint;
    table type*trtan*trta*avisitn*avisit*atptn*atpt/ out
    =blq(drop=percent);
run;

%macro outrtf(blankn=, halfblnk=);

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

%let dsid=%sysfunc(open(blq));
%let nsum=%sysfunc(attrn(&dsid.,nobs));
%let rc=%sysfunc(close(&dsid.));

%put "Check " &nsum.;

%if &nsum. lt 1 %then %do;
    proc sort data=adbx_orig nodupkey out=tpts(keep=type avisitn
    avisit atptn atpt trtan trta);
        by trtan trta type avisitn avisit atptn atpt;
    run;

    data blq1;
        set tpts;
        attrib blq length=$50.;
        blq='0';
    run;

%end;

%else %do;
    data blq1;
        attrib blq length=$50.;
        merge blq(in=a) tot;
        by trtan trta avisitn avisit atptn atpt;
        if not a then do;
            count=0;
        end;
        percent=count/total*100;

        if count=0 then blq='0';
        else if percent=100 then blq= put(count,3.)||' (100%>';
        else blq=put(count,3.)||' ('||put(percent,3.)||'%>';
    run;

%end;

/*Combine the BLQ with other stats*/
proc sort data=results03;
    by trtan trta type avisitn avisit atptn atpt;
run;

data results04;

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merge results03 blq1;
by trtan trta type avisitn avisit atptn atpt;
run;

proc sort data=results04;
by trtan trta type avisitn avisit atptn atpt;
run;

proc sort data=blq1;
by trtan trta type avisitn avisit atptn atpt;
run;

data results05;
merge results04 blq1;
by trtan trta type avisitn avisit atptn atpt;
run;

proc sort data=results05;
by type avisitn avisit atptn atpt;
run;

proc transpose data=results05(where=(type='pchg')) out=results06 prefix=r
name=varname;
by avisitn avisit atptn atpt;
var n meansd median minmax aci quart blq;
id trtan;
idlabel trta;
run;

proc sort data=results06;
by avisitn avisit atptn atpt varname;
run;

data results07;
set results06;
by avisitn avisit atptn atpt varname;
attrib stat variable length = $100.;
varname=upcase(varname);

if not missing(atpt) then variable=compbl(trim(avisit) ||', '||
atpt);
else variable=compbl(avisit);

VARIABLE1=VARIABLE; /* 3) KB 18Sep2014 */

if index(atpt,'T0') then variable=tranwrd(variable,'T0','T${sub 0}');

if varname='N' then do;
statord=1;
stat='n';
end;

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        else if varname='BLQ' then do;
            statord=2;
            stat='BLOQ - n (%)';
            delete;          * not required for this output;
        end;
    else if varname='CI' then do;
        statord=4;
        stat='95% CI';
        delete;          * not required for this output;
    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;
        statord=7;
        stat='Min, Max';
    end;
    else if varname='MEANSD' then do;
        statord=3;
        stat='Mean (SD)';
    end;
    else if varname='ACI' then do;
        statord=4;
        stat='95% CI';
    end;
    drop varname;
run;

data results08;
    set results07;
    if stat='n' then do;
        * havent set changes to missing as not expected ;
        if missing(r1) then r1='0';
        if missing(r2) then r2='0';
        if missing(r3) then r3='0';
    end;
run;

data labels;
set results08;
    attrib r1 label = "THS 2.2$(N=&trt1) "
           r2 label = "CC$(N=&trt2) "
           r3 label = "SA$(N=&trt3) ";

                                flag=1;
run;

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proc sql noprint;
    create table table.T_15_02_04_08 as
    select avisitn, atpt, /*variable*//*VARIABLE1*/VARIABLE, statord,
    stat, r1, r2, r3 /* 3) KB 18Sep2014 */ /* 5) KB 20Oct2014 */
    from labels
    order by avisitn, atptn, statord;
quit;

proc sort data=labels;
    by avisitn atptn statord;
run;

data paging;
    set labels;
    by avisitn atptn statord;
    if (first.avisitn or first.atptn) and ln > 16 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;

ods path stdlib.tl06324 (read) ;
ods results off;
ods rtf toc_data
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;

title ;
footnote;
%let wd=0;

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

    /* Amend title as needed */
    _firtitl="Table 15.2.4.8 Descriptive Statistics of Time
Matched Changes (%) in Exhaled CO - FAS";
    _upcas=(length("Path: &TFLpath.")-
length(compress("Path:&TFLpath.", 'ABCDEFGHIJKLMNOPQRSTUVWXYZ')))/2;
    len=&blankn.-length("(page &i of &page)");

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        if eof then do;
        call symput('_FSRTITL', trim(left(_firtitl)));
        call symput('_blankn', compress(put(len,best.)));
        end;

        drop _firtitl _upcas len;
run;

ods proclabel = ' ';
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 %then %do; contents=' ' %end; %else %do; contents='' %end;;;
        column flag page avisitn atptn variable statord stat r1 r2 r3 ;

        define flag          / order order = internal noprint;
        define page          / order order = internal noprint;
        define avisitn       / order order=internal noprint;
        define atptn         / order order=internal noprint;
        define variable       / group style={just=left cellwidth=3.3cm}
style(header)={just=center} "Timepoint";
        define statord       / order order = internal noprint;
        define stat          / display style={just=left cellwidth=1.5cm}
style(header)={just=center} "Statistic";
        define r1            / display style={just=c cellwidth=1.7cm}
style(header)={just=center};
        define r2            / display style={just=c cellwidth=1.7cm}
style(header)={just=center};
        define r3            / display style={just=c cellwidth=1.7cm}
style(header)={just=center};

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

        break after page / page;

        compute after variable;
                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;

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        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: T${sub 0} = Time of first product use on study day.";
        %if &nsum. ge 1 %then %do;
            line 'Note: LOQ = XX %'; /*Update this value if required*/
        %end;
        line ' ';
        line 'Appendix 15.3.3.2';
        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_08.lst" new;
run;

proc contents data = table.T_15_02_04_08 varnum;
run;
ods listing close;
proc printto ; run;
*=====;
* END OF PROGRAM CODE ;
*=====;

```