

```

%_mprintto;
options notes nosource;
/* 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");
    call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;
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        : tl_anlmceq.sas;
%put NOTE: Purpose              : table and figure of analysis of mceq
questionnaire data;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADQSPA;
%put NOTE: Output               : t_15_2_4_15(mceq) L_16_4_4_15(MCEQ) ;
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_ahall;
%put NOTE: Creation Date        : 2014-05-30;
%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: 25Jun2014  AMH         1) Small n in statistics row;
%put NOTE: 25Jun2014  AMH         2) Conservative rounding of Ci and SD;
%put NOTE: 25Jun2014  AMH         3) Add CO listing to reference list;
%put NOTE: 25Jun2014  AMH         4) Amend footnotes;
%put NOTE: 25Jun2014  AMH         5) Change SD to SE in stats row;
%put NOTE: 25Jun2014  AMH         6) Add line to listing indicating where
clause used on input dataset;
%put NOTE: 25Jun2014  AMH         7) Amend Menthol to menthol;
%put NOTE: 11Aug2014  AMH         8) Center Align results;
%put NOTE: ;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

```

```

*=====;
* START OF PROGRAM CODE ;
*=====;
/*formats macro and appendix output macros*/
%include
"/cvn/projects/prj/development/000000106326/dev/adhoc/TMPLTMIX.sas";

*****;
* read in data ;
*****;
data adsl;
    set adam.adsl(where=(pprotfl='Y'));
    if analgrln=1 then do;
        if index(trt01a,'THS 2.2') or index(trt02a,'THS 2.2') then
colord=1;
        output;
        if index(trt01a,'CC') or index(trt02a,'CC') then colord=2;
        output;
    end;
    else if analgrln=2 then do;
        if index(trt01a,'THS 2.2') or index(trt02a,'THS 2.2') then
colord=1;
        output;
        if index(trt01a,'NRT') or index(trt02a,'NRT') then colord=2;
        output;
    end;
    else if missing(analgrln) then delete;
run;

proc sort data=adsl nodupkey out=adsl1;
    by analgrln analgrl colord subjid;
run;

proc freq data=adsl1(where=(not missing(colord))) noprint;
    table analgrln*analgrl*colord/ out =totals2(drop=percent
rename=(count=total));
run;

data _null_;
    set totals2;
    call
symput('tot'||strip(put(colord,best.))||strip(put(analgrln,best.)),strip(
put(total,best.)));
run;

proc sort data=adam.adqspa(where = (anl01fl = 'Y' and pprotfl='Y' and
analgrln=1)) out=adqspa1;
    by analgrl paramcd;
run;

/*treatment and paramter formats to display text rather than numbers for
listing*/

```

```

%fmt(datain=adqspal, start=trtan, label=trta, name=trt);
%fmt(datain=adqspal, start=paramn, label=param, name=par);

data adqspa;
    set adqspal;
    format trtan trt. paramn par.;
run;

%let tflno=L_15_04_04_15(MCEQ);

title1 j=1 "Listing 15.4.4.15 Analysis of MCEQ Subscales - PK Population"
;

title1 j=1 "PAGESPLIT"; /*do not change*/
title2 j=1 'Subscale: #byvall';
title3 j=1 'Proc Mixed Procedure';
TITLE4 J=L "The where clause used on the dataset adam.adqspa: anl01fl =
'Y' and pprotfl='Y'"; /* 13) AMH 25Jun2014 */

%mixout1(fileout=/cvn/projects/prj/data/000000106326/TFL/&TFL_Part./&tflno);
options ps=28;

proc mixed data=adqspa method=reml maxiter=200 order=internal ;
    by paramn;
    class subjdn trtseqan trtan aperiod ;
    model aval = trtseqan aperiod trtan / outp=pred ;
    random subjdn(trtseqan) / subject=subjdn type=vc;
    lsmeans trtan / pdiff alpha=0.05 cl;
    ods output lsmeans=lsmeans;
    ods output diffs=diffs;
run;

title3 j=1 'Residual Plots';
options ps=27; /*change this for proc plot*/

proc rank data=pred out=resid normal=vw ;
    by paramn ;
    ranks nscore;
    var resid;
run;

proc plot data=resid hpercent=50;
    by paramn ;
    plot resid*pred / vref=0;
    plot resid*nscore;
run;
quit;

%mixout2(blankn=70, halfblnk=N,title=Listing 15.4.4.15 Analysis of MCEQ
Subscales - PK Population);

/*data counts*/

```

```

proc univariate data=adqspa noprint;
  by paramn;
  class trtan ;
  var aval;
  output out=num n=n1;
run;

/*Manipulate datasets for output all relevent stats on each row*/
/* _____ */
data tabout;
  length out $100 stat $100;
  set lsmeans(in=a) diffs(in=b) num(in=c);
  /*ordering columns of treatmnents*/
  analgrln=1;
  if b then colord=3;
  else if trtan=4 then colord=1;
  else colord=2;
  /* N row*/
  if c then do;
    ord=1;
    stat=/'N'/'n'; /* 1) AMH 25Jun2014 */
    out=compress(put(n1,best.));
    output;
  end;
  /*mean (sd) row*/
  if a or b then do;
    ord=2;
    stat='Mean (SE)'; /* 5) AMH 25Jun2014 */
    out=compress(put(round(estimate,0.01),8.2));
    if colord=3 then out=compress(out)||'
('||compress(put(/round(stderr,0.001)*CEIL(STDERR*1000)/1000,8.3))||')'
; /* 2) AMH 25Jun2014 */
    output;
  /*95% CI row*/
    ord=3;
    stat='95% CI';

    out=compress(put(/round(lower,0.01)*FLOOR(LOWER*100)/100,8.2))||',
'||compress(put(/round(upper,0.01)*CEIL(UPPER*100)/100,8.2)); /* 2) AMH
25Jun2014 */
    output;
  end;
run;

/*transpose for output*/
proc sort data=tabout;
  by analgrln paramn ord colord;
run;

proc transpose data=tabout out=ttabout(drop=_NAME_) prefix=col;
  by analgrln paramn ord stat;

```

```

        id colord;
        var out;
run;

/* Standard - macro for paging */
%macro outrtf(blankn=68, halfblnk=N, ref=);

/* treatment column headers and footnotes */

/*group 1*/
%let col11=THS 2.2 Menthol#(N=&tot11);
%let col21=mCC#(N=&tot21);
%let col31=THS 2.2 Menthol -#mCC;
%let foot1=%str(mCC = menthol conventional cigarettes);/* 7) AMH
22JUN2014 */

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

/* 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_04_15(MCEQ);

/*page numbers*/
data paging;
    set ttabout;
    by analgrln paramn ;
    flag=1;
    retain ln 0 page 0;
    if first.paramn then ln+1;
    if first.analgrln or ln>3 then do;
        page+1;
        ln=1;
    end;
    if last.analgrln then call symput("tpage",compress(put(page,best.)));
run;

/* Standard - leave this */
options number nodate orientation=landscape papersize=&p_pgsize missing='
' NOQUOTELNMAX/*turn off warnings about quoted strings to long*/;
ods escapechar='`';
%let linetop = \brdrt\brdrs\brdrw30; * needs to be 1.5pt so calculated
in twips (1/20 pt) ;
%let linebot = \brdrb\brdrs\brdrw30;
%let linebot2 = \brdrb\brdrs\brdrw15;

```

```

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 &tpage;

title ;
footnote;
%let wd=0;

data comp;
    set paging end=eof;
    by paramn ord;
    where page=&i;
    call symput('grp',compress(put(analgrln,best.)));
    /* Amend title as needed */
    _firtitl="Table 15.2.4.15    Analysis of MCEQ Subscales - PK
Population";
    _upcas=(length(_firtitl)-
length(compress(_firtitl,'ABCDEFGHIJKLMNOPQRSTUVWXYZ')))/2;
    len=&blankn.-length("(Page &i of &tpage)");
    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;
ods proclabel = ' ';

* 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 spanrows split =
'#'
%IF &I=1 %THEN %DO; CONTENTS=' ' %END; %ELSE %DO; CONTENTS='' %END;;
    column flag page paramn ord stat ("Group-&grp PK &linebot." coll
col2 col3) ;
    define flag / order noprint;
    define page          / order order = internal noprint;
    define paramn        / group order=internal style={just=left
cellwidth=2cm} "Subscales";
    define ord           / order order=internal noprint;

```

```

        define stat          / display style={just=left cellwidth=1.5cm}
"Statistic";
        define coll          / display style={just=C/*d*/ cellwidth=1.5cm}
style(header)={just=center} "&&coll&grp"; /* 8) AMH 11Aug2014 */
        define col2          / display style={just=C/*d*/ cellwidth=1.5cm}
style(header)={just=center} "&&col2&grp"; /* 8) AMH 11Aug2014 */
        define col3          / display style={just=C/*d*/ cellwidth=1.5cm}
style(header)={just=center} "&&col3&grp"; /* 8) AMH 11Aug2014 */

        break after page / page;

break before flag / page %IF &I=1 %THEN %DO;
        CONTENTS="&_FSRTITL" %END; %ELSE %DO; CONTENTS='' %END;;

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 paramn ;
        line " ";
endcomp;

compute after _page_ / style={just=left protectspecialchars=off}
pretext="&linetop."};
        LINE "Note: &&foot&grp; THS = Tobacco Heating System.";
        LINE "Note: Higher scores indicate greater intensity on that
scale.";
        LINE 'Note: Means and 95% CI are the adjusted least squares means
and confidence intervals from an ANOVA model.';
/*        line "Note: Means and 95% confidence interval (CI) are the
adjusted least squares means and CIs from an ANOVA model with sequence,
period and product as fixed effect factors and subject within sequence as
a random effect.";*/
/*        line "Note: Comparison overall time points is the main
comparison.";*/
/*        line "Note: &&foot&grp; THS = Tobacco Heating System.";*/
        line "";
        line "Appendix &ref.";
        line "Path: &TFLpath." &_blankn.*"\~\~" "(Page &i of
&tpage)";
        line "Program Run: &sysdate &sysuserid Program Status:
&status";
endcomp;

run;

```

```
%end;
ods rtf close;
ods results on;
ods path reset;

%mend ;

%outrtf(blankn=69, halfblnk=Y, ref=15.4.4.15 and 15.3.6.12); /* 3) AMH
25Jun2014 */

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