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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        : f_hst.sas;
%put NOTE: Purpose              : Figure of HST parameters per cigarette
FAS;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADXT;
%put NOTE: Output               : f_15_1_2_39(hst);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_jhardman;
%put NOTE: Creation Date        : 2014-08-05;
%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: 15Sep2014   JMH       1) Added XLS output;
%put NOTE: 16Sep2014   JMH       2) Amended title and footnotes;
%put NOTE: 19Sep2014   JH        3) Increased axis length;
%put NOTE: 02Oct2014   JMH       4) Added Day 5 to axis as per cleint
comments;
%put NOTE: ;
%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=F_15_01_02_39(hstq);

/* Standard - leave this */

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%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;

/* Example of basic GTL syntax */
ods _all_ close;
%let temp=/cvn/projects/prj/development/000000106324/dev/macro/;

/* Ensure ODS listing, html etc is turned off to prevent */
/* temporary or junk image files being produced */
options notes source source2 nofullstimer validvarname=upcase
nonumber nodate orientation=portrait papersize=&p_pgsz missing=' ';
ods graphics on; /* As we are effectively using ODS graphics we need to
ensure that it is turned on */
ods graphics / height=/*18*/14cm width=16cm noborder; /* Removes border
around the image */
ods path reset;
/* please include styles template */
%include "&temp.figtmpplt.sas";

ods rtf toc_data
file="/cvn/projects/prj/data/000000106324/TFL/&TFL_Part/&tflno..rtf"
style=tl06324_g startpage=yes headery=1440 footery=1440 ;

ods exclude all;

data qs01;
    set adam.adxt(where=(anl02fl='Y' and fasfl='Y' and
parcat1='Topography'));
    if ablfl='Y' then do; avisit='Baseline'; avisitn=100; end;
    if avisit ne 'Baseline' and avisitn lt 101 then delete;

    attrib axislabel length=$100.;

    parm=tranwrd(param, ' (','&(');
    parm2=(scan(parm,1,'&'));
    parm2a=substr(parm2,1,1)||lowercase(substr(parm2,2));
    parm3=trim(parm2a)||' '||scan(parm,2,'&')||' '||scan(parm,3,'&');

    if not missing(avalu) then axislabel=strip(parm2) || ' (' ||
strip(avalu) || ')';
    else axislabel=strip(parm2);
    drop param parm parm2 parm2a;
run;

data mean;
    set qs01;

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        statval=aval;
        rename parm3=param;
run;

proc sort data=mean; by paramn param axislabel trtan trta avisitn avisit;
run;

proc means data=mean alpha=0.05 noprint;
    output out=mean1 mean=mean std=std1 lclm=lci1 uclm=uci1;
    var statval;
    by paramn param axislabel trtan trta avisitn avisit;
run;

data mean2;
    set mean1;
    by paramn param axislabel trtan trta avisitn avisit;
    attrib tpt format = best.
           paramc length=$100.;

    avisit1=left(strip(tranwrd(avisit,'Day ','')));

    if avisit='Baseline' then tpt=0;
    else if avisit='Day 6/Discharge' then tpt=6;
    else tpt=input(avisit1,best.);

    paramc=param;

    keep paramn paramc axislabel trtan trta avisitn avisit mean lci1
    uci1 tpt ;
run;

/* 4) start JMH 02Oct2014 */ /*Add ion Day 5 as per client comments*/
PROC SORT DATA=MEAN2 NODUPKEY OUT=MEAN2A(KEEP=PARAM: TRT: AXISLABEL:);
    BY PARAMN PARAMC AXISLABEL TRTAN TRTA;
RUN;

DATA MEAN2B;
    SET MEAN2A;
    AVISITN=105;
    AVISIT='Day 5';
    TPT=5;
RUN;

DATA MEAN2C;
    SET MEAN2 MEAN2B;
RUN;

PROC SORT DATA=MEAN2C; BY PARAMN PARAMC TRTAN TRTA AVISITN AVISIT; RUN;

/* 4) end JMH 02Oct2014 */

/*This will find the highest value to be plotted to make it easier to set
axis limits and intervals*/

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proc means data=/*mean2*/MEAN2C noprint; /* 4) JMH 02Oct2014 */
  var ucil;
  by paramn paramc;
  output out=axislimits max=max1;
run;

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data axislimits2;
  set axislimits;
  if paramn in(50 58 65) then do;
    maxaxis=20;
    inc=2;
  end;
  else if paramn in(54 55) then do;
    maxaxis=40;
    inc=5;
  end;
  else if paramn in(57 59 62) then do;
    maxaxis=300;
    inc=50;
  end;
  else if paramn in (51) then do;
    maxaxis=1200;
    inc=200;
  end;
  else if paramn in (52) then do;
    maxaxis=70;
    inc=100;
  end;
  else if paramn in (53) then do;
    maxaxis=3;
    inc=0.5;
  end;
  else if paramn in (56) then do;
    maxaxis=60;
    inc=5;
  end;
  else if paramn in (60) then do;
    maxaxis=3000/*2500*/; /* 3) JH 19SEP2014 */
    inc=500;
  end;
  else if paramn in (61) then do;
    maxaxis=175;
    inc=25;
  end;
  else if paramn in (63) then do;
    maxaxis=450;
    inc=50;
  end;
  else if paramn in (64) then do;
    maxaxis=5;
    inc=1;
  end;
  else if paramn in (66) then do;
    maxaxis=6;
  end;

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        inc=1;
    end;
    else put "WA" "RNING: Axis limit and increment is not set for
parameter " paramn= paramc= ;
run;

data mean3;
    merge /*mean2*/MEAN2C axislimits2; /* 4) JMH 02Oct2014 */
    by paramn paramc;
run;

/* 1) start JMH 15Sep2014 */
PROC SQL;
CREATE TABLE MEAN3_X AS
SELECT PARAMC, TRTA, AVISIT, MEAN, LCI1, UCI1
FROM MEAN3;
QUIT;

PROC EXPORT
DATA=MEAN3_X
DBMS=XLSX
OUTFILE="/cvn/projects/prj/data/000000106324/TFL/&TFL_Part./&tflno..xlsx"
REPLACE;
SHEET=Sheet1;
/* 1) end JMH 15Sep2014 */

proc format;
    value xaxis
        0='Baseline'
        1='1'
        2='2'
        3='3'
        4='4'
        5='5'
        6='6';
run;

title;
footnote;

proc sort data=mean2; by paramn; run;

data paging; /* paging is derived normally as with RTF type TFL */

    set mean3 end=last;
    by paramn;
    if first.paramn then ln=1;
    else ln+1;

    if ln=1 then page+1;

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        if last then call symput("maxpage", compress(page));
run;

%macro graph();

%do i=1 %to &maxpage; /* paging can either be done through a do loop or
multiple macro calls */

    data plot;
        set paging;
        where page = &i;
            call symput("param",left(trim(paramc)));
            call symput("max",maxaxis);
            call symput("inc",inc);
            call symput("axislabel",left(trim(axislabel)));
    run;

    proc template;
        define statgraph splot /store = work.templat;
            begingraph /;
            /* 2) start JMH 16Sep2014 */
            /*          entrytitle halign=left "Figure 15.1.2.39 HST per
Cigarette Parameters Arithmetic Mean and 95% CI - FAS";*/
            /*          entrytitle halign=left " " /*;*/
            /*          entrytitle halign=left "&param." /*;*/
            /*          entrytitle halign=left " " /*;*/
            /* 2) end JMH 16Sep2014 */
            layout overlay / border=false
axisopts=(linearopts=(tickvaluefitpolicy=rotate
tickvaluesequence=(start=0 end=5/*4*/ increment=1)) label="Study Day"
labelattrs=(size=8pt)) yaxisopts=(linearopts=(tickvaluesequence=(start=0
end=&max increment=&inc) viewmin=0 viewmax=&max) label="&axislabel"
/*labelattrs=(size=8pt)*/) cycleattrs=false; /* 4) JMH 02Oct2014 */
            seriesplot x=tpt y=mean / index=trtan primary=true
group=trta display=(markers) legendlabel="mean" name="series";
            scatterplot x=tpt y=mean / index=trtan group=trta
yerrorlower=lci1 yerrorupper=uci1
            legendlabel="mean" name="scatter" ;
            discretelegend "series";
            endlayout;
            /* footnotes work using the same option as the entrytitle
statement */
            /* 2) start JMH 16Sep2014 */
            /*          entryfootnote halign=left " " /*;*/
            /*          entryfootnote halign=left "Note: CC = Conventional
cigarettes; SA = Smoking abstinence; THS = Tobacco Heating System." /*;*/
            /*          entryfootnote halign=left " " /*;*/
            /*          entryfootnote halign=left
"Appendix 15.2.4.58"; */
            /*          entryfootnote halign=left "Path: &TFLpath."
halign=right "(Page &i of &maxpage)"; */
            /*          entryfootnote halign=left "Program Run: &sysdate
&sysuserid Program Status: &status";*/
            /* 2) end JMH 16Sep2014 */

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        endgraph;
    end;
run;

ods select all;

/* 2) start JMH 16Sep2014 */
ODS ESCAPECHAR='^';
ODS RTF PREPAGE="^S={outputwidth=100% just=l font_size=12pt
font_weight=bold background=white foreground=black
font_face=arial}^R/RTF'\QL' Figure 15.1.2.39 HST per Cigarette Parameters
Arithmetic Mean and 95% CI - FAS";
ODS RTF PREPAGE="^S={outputwidth=100% just=l font_size=12pt
font_weight=bold background=white foreground=black
font_face=arial}^R/RTF'\QL' ";
ODS RTF PREPAGE="^S={outputwidth=100% just=l font_size=12pt
font_weight=bold background=white foreground=black
font_face=arial}^R/RTF'\QL' &param.";
/* 2) end JMH 16Sep2014 */

proc sgrender data=plot template=splot; /* applies the above
template to the specified data */
    format tpt xaxis.;
run;

/* 2) start JMH 16Sep2014 */
ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'";
ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Note: CC = Conventional
cigarettes; SA = Smoking abstinence; THS = Tobacco Heating System.";
ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Note: Baseline is the last
assessment prior to first product use in CC/THS 2.2 arms on Day 1 or last
assessment prior to 06:29 AM in SA arm on Day 1.";
ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'";
ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Appendix 15.2.4.58";
ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Path: &TFLpath.
(Page &i of &maxpage)";
ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Program Run: &sysdate
&sysuserid Program Status: &status";
/* 2) end JMH 16Sep2014 */

%end;
%mend graph;
%graph;
proc printto ; run;
ods exclude all;
ods _all_ close;
ods graphics / reset;

```

