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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        : f_pkconc5.sas;
%put NOTE: Purpose              : Figure of plasma nicotine
concentrations by subject;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADPC;
%put NOTE: Output               : f_15_1_2_3(pkconc);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_jhardman;
%put NOTE: Creation Date        : 2014-08-11;
%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: 13Aug2014  JMH        1) Amended code to only keep required
variables in SSO;
%put NOTE: 22Sept14   CK         2) output excel file;
%put NOTE: 22Sept14   CK         3) move title and footnoe outside
graph;
%put NOTE: 24Sep2014  JR         4) Amended blq halves;
%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_03(pkconc);

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/* 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;

/* Example of basic GTL syntax */
ods _all_ close;
%let temp=/cvn/projects/prj/development/000000106326/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=18cm width=18cm noborder noscale; /* Removes border
around the image */
ods path reset;
/* please include styles template */
%include "&temp.figtmp.sas";
ods escapechar='|';
ods rtf toc_data
file="/cvn/projects/prj/data/000000106326/TFL/&TFL_Part/&tflno..rtf"
style=t106326_g startpage=yes headery=1440 footery=1440 ;

ods exclude all;

data sso;
    set adam.adpc;
    where paramcd in('NSTART' 'NEND');
    timeh=round((pactime/60),0.001);
    paramcd='NIC';
    regline=aval;

/*    drop aval;*/
    KEEP PARAMCD USUBJID APERIOD TRTA TRTAN PKDAY TIMEH REGLINE; /* 1)
JMH 13Aug2014 */
run;

proc sort data = adam.adpc(where=(paramcd='NIC' and pprotfl ='Y' and
pcstat ne 'NOT DONE' and anl01fl='Y')) out = adpc;
    by subjid;
run;

data adpc1_a;
    set adpc;
    by subjid;

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        timeh=round((pactime/60),0.001);
        /*if missing(dtype) then laval=aval;*/ /*Do not want to plot BLQ
values*/
        IF DTYPE NOT IN('BLQNULL' 'BLQZERO') AND NOT MISSING(AVAL) THEN
LAVAL=AVAL; /* 4) JR 24Sep2014 */
run;

proc sort data=adpc1_a;      by paramcd usubjid aperiod trta trtan pkday
timeh; run;
proc sort data=sso;      by paramcd usubjid aperiod trta trtan pkday timeh;
run;

data adpc1;
    merge adpc1_a(in=a) sso(in=b);
    by paramcd usubjid aperiod trta trtan pkday timeh;
    if a;
run;

/* 2) START CK 22Sep2014 */
PROC SQL;
CREATE TABLE ADPCX AS
SELECT USUBJID, ANALGR1, PARAM, TRTA, TIMEH, AVAL, LAVAL
FROM ADPC1 ORDER BY TRTAN, ANALGR1N, USUBJID, TIMEH;
QUIT;

PROC EXPORT
DATA=ADPCX
DBMS=XLSX
OUTFILE="/cvn/projects/prj/data/000000106326/TFL/&TFL_Part./&tflno..xlsx"
REPLACE;
SHEET=Sheet1;
/* 2) END CK 22Sep2014 */

title;
footnote;

proc sort data=adpc1;
    by paramcd subjidn aperiod pkday pactime;
run;

proc sort data=adpc1;
    by subjidn;
run;

data adpc2;
    set adpc1;
    by subjidn;
run;

proc sort data=adpc2;
    by analgr1n subjidn;
run;

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data paging;
    set adpc2 end=last;
    by analgr1n subjidn;

    if first.analgr1n or first.subjidn then page+1;

    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 */

%let twoplots=0;
%let threepLOTS=0;

data plot&i.;
    set paging;
    where page = &i.;

    call symput("group",strip(analgr1));
    if paramn=1 then call symput("unit",left(strip(avalu)));

    call symput("sub", compress(subjid));
run;

run;

ods select all;

proc sort data=plot&i.;
    by trtan;
run;

proc template;
define statgraph splot /store = work.templat;

    begingraph / border=false ;
    /* 3) CK 22Sept */
    /* entrytitle halign=left "Figure 15.1.2.3 Nicotine Plasma
Concentration (ng/mL) Profiles by Subject - PK Population";
    entrytitle halign=left " ";

    entryfootnote halign=left " ";
    entryfootnote halign=left "----- Lower limit of
quantification (0.2 ng/mL)";
    %if "&group." eq "Group-1" %then %do;
        entryfootnote halign=left "Note: mCC = menthol conventional
cigarettes; THS = Tobacco Heating System.";
    %end;

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        %if "&group." eq "Group-2" %then %do;
        entryfootnote halign=left "Note: NRT gum = Nicotine Replacement
Therapy gum; THS = Tobacco Heating System.";
        %end;

        entryfootnote halign=left "Regression line of the
apparent terminal elimination phase presented on semi-logarithmic plots";

        entryfootnote halign=left " ";
        entryfootnote halign=left "Appendix 15.3.3.2";
        entryfootnote halign=left "Path: &TFLpath." halign=right "(Page
&i of &maxpage)";
        entryfootnote halign=left "Program Run: &sysdate  &sysuserid
Program Status: &status"; */

        layout lattice / columns=1 rows=2 columngutter=2px
columnndatarange=union rowndatarange=union;

        cell;
        cellheader;
        entry halign=left " ";
        entry halign=left "&group.    Subject: &sub.";

        endcellheader;
        layout overlay /

        xaxisopts=(linearopts=(tickvaluesequence=(start=0 end=24
increment=4))
                                label="Time post-
product (h)")
        yaxisopts=(tickvalueattrs=(size=9pt)
linearopts=(tickvaluesequence=(start=0 end=60 increment=10)
                                viewmin=0 viewmax=60)
                                label="Nicotine
(&unit)")
                                cycleattrs=false;

                                referenceline
y=0.2 / lineattrs=(pattern=shortdash) ;
        seriesplot x=timeh y=aval / index=trtan
primary=true group=trta display=(markers) legendlabel="mean"
name="series";
        endlayout;
        endcell;

        cell;
        cellheader;
        entry halign=left "Semi-logarithmic scale";
        endcellheader;
        layout overlay /

        xaxisopts=(linearopts=(tickvaluefitpolicy=rotate
                                tickvaluesequence=(start=0 end=24 increment=4))

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                                label="Time post-
product (h)")
                                yaxisopts=(type=log
                                label="Nicotine
                                (&unit)"
                                logopts=(tickintervalstyle=logexpand
viewmin=0.1 viewmax=100 base=10)
                                tickvalueattrs=(size=9pt))
cycleattrs=false;
                                referenceline
y=0.2 / lineattrs=(pattern=shortdash) ;
                                scatterplot x=timeh y=laval / index=trtan
primary=true group=trta legendlabel="mean" name="series";
                                seriesplot x=timeh y=regline / index=trtan
group=trta lineattrs=( thickness=0.8) ;
                                endlayout;
                                endcell;
                                endlayout;

                                layout globallegend / type=column title=" " border=false;
                                discretelegend "series";
                                endlayout;

                                endgraph;
                                end;
run;

ods select all;

/* 3) START CK 22Sep2014 */
ODS ESCAPECHAR='^';
ODS RTF PREPAGE="^S={outputwidth=100% just=1 font_size=12pt
font_weight=bold background=white foreground=black
font_face=arial}^R/RTF'\QL' Figure 15.1.2.3 Nicotine Plasma Concentration
(ng/mL) Profiles by Subject - PK Population";
/* 3) END CK 22Sep2014 */

proc sgrender data=plot&i. template=splot; /* applies the above
template to the specified data */
run;

/* 3) START CK 22Sep2014 */
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'";
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'----- Lower limit of
quantification (0.2 ng/mL)";
%IF "&GROUP." EQ "Group-1" %THEN %DO;
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Note: mCC = menthol
conventional cigarettes; THS = Tobacco Heating System.";
%END;
%IF "&GROUP." EQ "Group-2" %THEN %DO;

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ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Note: NRT gum = Nicotine
Replacement Therapy gum; THS = Tobacco Heating System.";
%END;
ODS RTF TEXT="^S={outputwidth=100% just=l font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Regression line of the
apparent terminal elimination phase presented on semi-logarithmic plots";
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 15.3.3.2";
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";
/* 3) END CK 22Sep2014 */

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ods exclude all;
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%end;
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```
%mend graph;
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```
%graph;
```

```
proc printto;
```

```
run;
```

```
ods rtf close;
```

```
ods listing;
```

```
ods select all;
```

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*=====;
* END OF PROGRAM CODE;
*=====;

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