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\* Project : ZRHM-REXA-07-JP

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\* Program name : t1502020502\_ZRHM-REXA-07\_V1.sas

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\* Author : W. Yang

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\* Date created : 06/06/2015

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\* Purpose : Create Table Table 15.2.2.5.2 Summary of Average Daily Product Use by Product Use Category in Ambulatory Period - PP Set

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\* Revision History :

\*

\* Date Author Ref Revision (Date in YYYYMMDD format)

\*

\*\*\*\*\*,

%let prgname=T1502020502\_ZRHM\_REXA\_07\_JP\_V1;

options nomprint nosymbolgen nomlogic validvarname=upcase;

options sasautos=("W:\pmp07\macros" sasautos) notes;

%init(delivery=9);

%titlecsv(prgname=&prgname., version=5);

%put &title1;

%put &title2;

%put &APPENDIX;

```
%put &endpoint;
```

```
%put &outname.;
```

```
data adsl;
```

```
    set adam.adsl;
```

```
run ;
```

```
proc sort data=adam.adex out=adex;
```

```
    by usubjid;
```

```
    where dtype='AVERAGE' and aval not in (.);
```

```
run;
```

```
data data0;
```

```
    merge adsl(in=a keep=usubjid trt01an) adex(in=b);
```

```
    by usubjid;
```

```
    if a and b;
```

```
    param=tranwrd(param,'Ave. Daily ','');
```

```
    param=tranwrd(param,'Average Daily ','');
```

```
    param=tranwrd(param,' by Period','');
```

```
    param=tranwrd(param,' in Ambulatory','');
```

```
    param=strip(param);
```

```
    if param='THS 2.2' then param='THSm2.2';
```

```
    if param='mCC'   then param='CC/mCC';
```

```
run;
```

```
proc sort; by param paramn apuper apuperc; run;
```

```
data data1(rename=(ord=paramn ));
```

```
set data0;
```

```
by param paramn apuper apuperc;
```

```
retain ord;
```

```
if first.param then ord=paramn;
```

```
drop paramn;
```

```
run;
```

```
%macro mtemp;
```

```
data data2;
```

```
set data1;
```

```
if trt01an=4 and (gpucat2n=2 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or gpucat&i.n=2 and  
apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=1; trt=1; output; end;
```

```
if trt01an=4 and (gpucat2n=3 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or gpucat&i.n=3 and  
apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=1; trt=2; output; end;
```

```
if trt01an=4 and (gpucat2n=1 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or gpucat&i.n=1 and  
apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=1; trt=3; output; end;
```

```
if trt01an=4 and (gpucat2n=4 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or gpucat&i.n=4 and  
apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=1; trt=4; output; end;
```

```
if trt01an=4 and (gpucat2n>. and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or gpucat&i.n>. and  
apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=1; trt=5; output; end;
```

```
if trt01an=4 and (pucat2n=3 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=3 and  
apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=2; trt=1; output; end;
```

if trt01an=4 and (pucat2ex^="" and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.ex^="" and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=2; trt=2; output; end;

if trt01an=4 and (pucat2n=4 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=4 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=2; trt=3; output; end;

if trt01an=4 and (pucat2n in (3 4) and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n in (3 4) and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=2; trt=4; output; end;

if trt01an=4 and (pucat2n=5 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=5 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=3; trt=1; output; end;

if trt01an=4 and (pucat2n=6 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=6 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=3; trt=2; output; end;

if trt01an=4 and (pucat2n in (5 6) and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n in (5 6) and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=3; trt=4; output; end;

if trt01an=4 and (pucat2n=8 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=8 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=4; trt=1; output; end;

if trt01an=4 and (pucat2n=9 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=9 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=4; trt=2; output; end;

if trt01an=4 and (pucat2n in (8 9) and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n in (8 9) and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=4; trt=4; output; end;

if trt01an=5 and (pucat2n=1 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=1 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=5; trt=1; output; end;

if trt01an=5 and (pucat2n=1 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=1 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=5; trt=3; output; end;

if trt01an=3 and (pucat2n=12 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=12 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=6; trt=1; output; end;

if trt01an=3 and (pucat2n=11 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=11 and apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=6; trt=2; output; end;

```
if trt01an=3 and (pucat2n=10 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n=10 and
apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=6; trt=3; output; end;
```

```
if trt01an=3 and (pucat2n>9 and apuper=2 and pprot2fl='Y' %do i=3 %to 4; or pucat&i.n>9 and
apuper=&i. and pprot&i.fl='Y' %end;) then do; order1=6; trt=4; output; end;
```

```
run;
```

```
%mend;
```

```
%mtemp;
```

```
*** Macro for Continuous variables statistics ***;
```

```
%macro mmeans(in_dsn=, class=, var=, order1=);
```

```
proc means data=&in_dsn noprint nway alpha=0.05;
```

```
class &class trt;
```

```
var &var;
```

```
output out= stat1 n=_n mean=_mean std=_std median=_median min=_min max=_max lclm=_lclm
uclm=_uclm;
```

```
run;
```

```
proc sort data=stat1(keep=order1 paramn param) nodupkey out=shell; by order1 paramn param; run;
```

```
data shell;
```

```
set shell;
```

```
if order1=1 then do; %do i=1 %to 5; trt=&i.; output; %end; end;
```

```
else if order1=5 then do; %do i=1 %to 3; trt=&i.; output; %end; end;
```

```
else do; %do i=1 %to 4; trt=&i.; output; %end; end;
```

```
run;
```

```
data shell;
```

```

set shell;

length apuperc $40;

apuper=2; apuperc='Period 2'; output;

apuper=3; apuperc='Period 3'; output;

apuper=4; apuperc='Period 4'; output;

run;


proc sort data=shell; by order1 paramn param apuper apuperc trt; run;

proc sort data=stat1; by order1 paramn param apuper apuperc trt; run;


data stat2;

    merge shell stat1 ;

    by order1 paramn param apuper apuperc trt;

    if _n=. then _n=0;

run;


proc sort data=stat2; by order1 paramn param apuper apuperc _n trt; run;


data stat2;

    set stat2;

    by order1 paramn param apuper apuperc _n trt;

    retain pmin;

    if first.apuperc then pmin=_n;

run;

```

```
proc sort data=stat2; by order1 paramn param descending pmin apuper apuperc trt; run;
```

```
data stat3;  
  
    set stat2;  
  
    by order1 paramn param descending pmin apuper apuperc trt;  
  
    retain mpmin;  
  
    if first.param then mpmin=pmin;  
  
    if order1 in (2 3 4) and mpmin<=4 then delete;  
  
run;
```

```
proc sort; by &class trt; run;
```

```
data stat4;  
  
    length n meansd median minmax ci $50 fm1-fm3 $10;  
  
    set stat3 ;  
  
    deci=0;  
  
  
    fm1=cats(12,".",strip(put(deci+1,3.)));  
    fm2=cats(12,".",strip(put(deci+2,3.)));  
    fm3=cats(12,".",strip(put(deci+0,3.)));  
  
  
    if _std>. then _std=ceil(_std*100)/100;  
    if _uclm>. then _uclm=ceil(_uclm*10)/10;  
    if _lclm>. then _lclm=floor(_lclm*10)/10;  
  
    if _lclm=. and _std=0 and _mean>. then do; _lclm=_mean; _uclm=_mean; end;
```

```

    if _mean ne . and _std ne . then meansd=strip(putn(_mean, fm1))||"
("||strip(putn(_std, fm2))||");

    else if _mean ne . and _std eq . then meansd=strip(putn(_mean, fm1))||" (NA)";

    if _lclm ne . then ci=strip(putn(_lclm, fm1))||", "||strip(putn(_uclm, fm1));

    if _min ne . then minmax=strip(putn(_min, fm3))||", "||strip(putn(_max, fm3));

    if _n>. then n=strip(putn(_n, best12.));

    if _median ne . then median=strip(putn(_median, fm1));

    if _n<4 then do; meansd='NC'; ci='NC'; median='NC'; minmax='NC'; end;

run;

```

```

proc transpose data=stat4 out=stat5 prefix=col;

    by &class;

    var n meansd ci median minmax;

    id trt;

run;

```

```

data final_&order1. (drop=_name_);

    length stat $100;

    set stat5;

    if _name_='N' then do; stat="n"; order2 =1; end;

    if _name_='MEANSD' then do; stat="Mean (SD)"; order2 =2; end;

    if _name_='CI' then do; stat="95% CI"; order2 =3; end;

    if _name_='MEDIAN' then do; stat="Median"; order2 =4; end;

    if _name_='MINMAX' then do; stat="Min, Max"; order2 =5; end;

```



```

run;

%mend mmeans;

%mmeans(in_dsn=data2, class=order1 paramn param apuper apuperc, var=aval, order1=1);

data final;

    set final_;;

    if order2=1 then do;

        if col1="" then col1='0'; if col2="" then col2='0';

        if col3="" then col3='0'; if col4="" then col4='0';

    end;

run;

proc sort data=final; by order1 paramn param apuper apuperc; run;

data final;

    set final;

    by order1 paramn param apuper apuperc;

    retain count pageno 0;

    if first.order1 then do;

        pageno+1;

        count=0;

    end;

    count+1;

```

```
if count=16 then do;
```

```
    pageno+1;
```

```
    count=1;
```

```
end;
```

```
run;
```

```
data odata.%sysfunc(scan(&prgname,1,'_'));;
```

```
    set final;
```

```
run;
```

```
%global totalpage;
```

```
data _null_;
```

```
    set final end=eof;
```

```
    if eof then do;
```

```
        call symput('totalpage', trim(left(put(pageno,8))));
```

```
    end;
```

```
run;
```

```
%put totalpage=&totalpage;
```

```
%trtrtfg(pgmname=&outname., pgmid=1, new=0, style=, bookmark=%lowcase(&outname.));
```

```
options nomprint nosymbolgen;
```

```
%let sline=\brdrb\brdrs\brdrw10\brsp20;
```

```
%macro reppart;
```

```
%do i = 1 %to &totalpage;
```

```
data out;
```

```
set final(where=(pageno=&i.));
```

```
call symput('order1', strip(put(order1,8.)));
```

```
run;
```

```
proc report data=out headskip headline spacing=4 nowd split='|' style=[outputwidth=100%]  
style(header column)=[protectspecialchars=off];
```

```
column pageno order1 paramn param apuper apuperc order2 stat
```

```
%if &order1=1 %then %do; ("THSm2.2 Product Use Category &sline." col1-col4) col5; %end;
```

```
%else %if &order1=2 %then %do; ("THSm2.2 Product Use Category &sline." col1-col3) col4; %end;
```

```
%else %if &order1=3 %then %do; ("THSm2.2 Product Use Category &sline." col1-col3) col4; %end;
```

```
%else %if &order1=4 %then %do; ("THSm2.2 Product Use Category &sline." col1-col3) col4; %end;
```

```
%else %if &order1=5 %then %do; ("mCC Product Use Category &sline." col1-col2) col3; %end;
```

```
%else %if &order1=6 %then %do; ("SA Product Use Category &sline." col1-col3) col4; %end;;
```

```
define pageno /order order=internal noprint;
```

```
define order1 /order order=internal noprint;
```

```
define paramn /order order=internal noprint;
```

```
define apuper /order order=internal noprint;
```

```
define order2 /order order=internal noprint;
```

```
define param /order "Product" style(column)=[cellwidth=15% asis=on] style(header)=[just=l];
```

```
define apuperc /order "Period" style(column)=[cellwidth=10% asis=on] style(header)=[just=l];
```

```

define stat /display "Statistic" style(column)=[cellwidth=10% asis=on] style(header)=[just=l];

%if &order1=1 %then %do;

define col1 /display "THS 2.2|[70-100%]" flow style(column)=[cellwidth=12% just=c];
define col2 /display "Dual Use|]30-70%[" flow style(column)=[cellwidth=12% just=c];
define col3 /display "CC|[0-30%]" flow style(column)=[cellwidth=12% just=c];
define col4 /display "Not Abstinent" flow style(column)=[cellwidth=12% just=c];
define col5 /display "Overall|THSm2.2" flow style(column)=[cellwidth=12% just=c];

%end;

%else %if &order1=2 %then %do;

define col1 /display "Primarily" flow style(column)=[cellwidth=12% just=c];
define col2 /display "Exclusively" flow style(column)=[cellwidth=12% just=c];
define col3 /display "Predominantly" flow style(column)=[cellwidth=12% just=c];
define col4 /display "THS 2.2 [70-100]" flow style(column)=[cellwidth=12% just=c];

%end;

%else %if &order1=3 %then %do;

define col1 /display "Dual mostly THS" flow style(column)=[cellwidth=12% just=c];
define col2 /display "Dual Balance" flow style(column)=[cellwidth=12% just=c];
define col3 /display "Dual mostly CC" flow style(column)=[cellwidth=12% just=c];
define col4 /display "Dual ]30-70[" flow style(column)=[cellwidth=12% just=c];

%end;

%else %if &order1=4 %then %do;

define col1 /display "Predominantly CC" flow style(column)=[cellwidth=12% just=c];
define col2 /display "Primarily CC" flow style(column)=[cellwidth=12% just=c];
define col3 /display "Exclusively CC" flow style(column)=[cellwidth=12% just=c];
define col4 /display "CC [0-30]" flow style(column)=[cellwidth=12% just=c];

```

```

%end;

%else %if &order1=5 %then %do;

    define col1 /display "Exclusively CC"      flow style(column)=[cellwidth=12% just=c];

    define col2 /display "Use of other|products"  flow style(column)=[cellwidth=12% just=c];

    define col3 /display "Total mCC arm"      flow style(column)=[cellwidth=12% just=c];

%end;

%else %if &order1=6 %then %do;

    define col1 /display "Abstinent"          flow style(column)=[cellwidth=12% just=c];

    define col2 /display "Predominantly|Abstinent" flow style(column)=[cellwidth=12% just=c];

    define col3 /display "Not Abstinent"      flow style(column)=[cellwidth=12% just=c];

    define col4 /display "Total SA arm"      flow style(column)=[cellwidth=12% just=c];

%end;

```

```

compute before apuper ;

```

```

    line "";

```

```

endcomp;

```

```

compute before _page_/style=[fontweight=bold fontsize=3.75];

```

```

    line @1 "&title1 &title2";

```

```

    line @1 "^R/RTF'\brdrb\brdrs\brdrw30\brsp20\b ' ";

```

```

endcomp;

```

```

compute after _page_/style=[fontsize=1.75];

```

```

    line @1 "Note: mCC = Menthol conventional cigarettes; SA = Smoking abstinence; THSm2.2 = Tobacco Heating System 2.2 Menthol; NC = Not calculated.";

```

```

    line @1 "Note: Periods defined as Period 2 ([Day 6 ambulatory ♦ Day 30 Visit]), Period 3 ([Day 30 Visit ♦ Day 60 Visit]) and Period 4 ([Day 60 Visit ♦ Day 90 Visit]).";

```

```
line @1 "Note: summaries not provided for subject who discontinued in previous periods.";
```

```
line @1 "&APPENDIX.";
```

```
line @1 "Study ID:ZRHM-REXA-07-JP      Program: &fprgname..sas      Status:  
&repversion./&fdate.      Page: &i of &totalpage.";
```

```
endcomp;
```

```
compute after pageno ;
```

```
/*      line "";*/
```

```
endcomp;
```

```
run;
```

```
%end;
```

```
%mend;
```

```
%reppart;
```

```
ods listing;
```

```
ods rtf close;
```