```
**********CSP517 programs************
00_idx_p365_cost_util_fy14.sas
00_inflation_factors_cpi.sas
31a_extract_datasets_FY14.sas
31b_chk_vital_31DEC2014.sas
31c_create_yearly_framework.sas
31d_process_ip_fy14.sas
31e_process_ip_ppps_fy14.sas
31f_process_op_fy14.sas
31g_process_fb_fy14.sas
31h_process_rx_fy14.sas
31i_sum_fb_fy14.sas
31j_mk_analy_fy14.sas
chk_missing.sas


**********00_idx_p365_cost_util_fy14.sas**********
*************************************************************************;
* Name: /export/data/avgcost/csp517/00_idx_p365_cost_util_fy14.sas       ;
*                                                                        ;
* Description: this is the same as prog 11h ... made into code snippett  ;
*              in order to adjust cost to <<< FY14 >>> dollars           ;
*               ... prev not adjusted as it was 2010 cost                ;
*                                                                        ;
* Input: toddw.baseline                                                  ;
*        toddw.adamc_ip_index_cabg                                       ;
*        toddw.adamc_ip_p365_admits                                      ;
*        toddw.adamc_op_p365_visits                                      ;
*        toddw.adamc_rx_p365_scripts                                     ;
*        toddw.adamc_distance_va    (for distance)                       ;
*        toddw._vital_mini          (THIS IS OLD INFO ... DOES NOT MATTER ;
*                                    ... THIS WILL BE DROPPED LATER)     ;
*                                                                        ;
* Output: WORK.ADAMC_START                                               ;
*                                                                        ;
* Ext.Macros: Yes ... Inflation Adjustment Macro                         ;
*                                                                        ;
* Run Under:  SAS 9.2 for Unix                                           ;
*                                                                        ;
* Date      Author    Modification History                               ;
* ---------------------------------------------------------------------;
* 27MAY14   AdamC                                                        ;
* 17SEP15   Howard Jiang  Modified for FY14                              ;
*************************************************************************;

* INFLATION ADJUSTMENT HERE;
%include "/export/data/csp517/csp517/programs/00_inflation_factors_cpi.sas";

options ps=70 ls=170 nodate nosymbolgen nomprint;

%let postrand = 365;

%let outf_ = ADAMC_START;     /*** Data Set in WORK ***/

************************************************************************;
* 1. get the CABG date                                                 ;
************************************************************************;

data bl01;
   length scrssn 8.;
   set toddw.baseline;    /***** <----- *****/
   format date_use date9.
          randate365 mmddyy10.
   ;
   if missing(cabgdate) then date_use=randate;   /*** 3 cases ***/
      else                   date_use=cabgdate;
   if not missing(scrssn);                       /*** FILTER  ***/
   randate365=intnx("day",randate, &postrand - 1);
   label randate   ="Rand. Date"
         randate365="Rand. Date to 365 Days"
   ;
```

```
   keep scrssn center randate randate365 onpump;
run;

proc sort data=bl01;
   by scrssn;
run;

*************************************************************************;
* 2. get the CABG admissions (no summarization required)                 ;
*************************************************************************;

data index;
   set toddw.adamc_ip_index_cabg;  /***** <----- *****/

  * FIX LABEL;
   label idx_ptf_costl="INDEX COSTL (PTF)";
run;

data combine1;
   merge bl01
         index
   ;
   by scrssn;

  * THIS IS USE TO TEST;
  * idx_dcst_tot_ =idx_dcst_tot;
  * idx_ptf_costn_=idx_ptf_costn;
  * idx_ptf_costl_=idx_ptf_costl;

   if not missing(idx_dnur_tot ) then do; %adj_cost14(idx_disday,idx_dnur_tot ); end;
   if not missing(idx_dsur_tot ) then do; %adj_cost14(idx_disday,idx_dsur_tot ); end;
   if not missing(idx_drad_tot ) then do; %adj_cost14(idx_disday,idx_drad_tot ); end;
   if not missing(idx_dlab_tot ) then do; %adj_cost14(idx_disday,idx_dlab_tot ); end;
   if not missing(idx_dpha_tot ) then do; %adj_cost14(idx_disday,idx_dpha_tot ); end;
   if not missing(idx_dao_tot  ) then do; %adj_cost14(idx_disday,idx_dao_tot  ); end;
   if not missing(idx_dcst_tot ) then do; %adj_cost14(idx_disday,idx_dcst_tot ); end;
   if not missing(idx_ptf_costn) then do; %adj_cost14(idx_disday,idx_ptf_costn); end;
   if not missing(idx_ptf_costl) then do; %adj_cost14(idx_disday,idx_ptf_costl); end;

  * fix 9x missing COSTN and COSTL;
   if missing(idx_ptf_costn) then do;
      if substr(idx_desc,1,1) ne " " then do;
         idx_ptf_costn=idx_dcst_tot;
         idx_ptf_costl=idx_dcst_tot;
         idx_ind_impute=1;
      end;
   end;

  * fix 1x missing IDX_DAYS;
   if missing(idx_days) and not missing(idx_los_dss) and (idx_los_dss=idx_ptf_los) then do;
      idx_days=idx_los_dss;
   end;

  * fix missing IDX_LOS_DSS;
   if missing(idx_los_dss) and not missing(idx_days) and (idx_days=idx_ptf_los) then do;
       idx_los_dss=idx_days;
   end;
   label idx_ind_impute="INDEX Ind COSTN/COSTL Imputed";
run;
/*
NOTE: There were 2200 observations read from the data set WORK.BL01.
NOTE: There were 2200 observations read from the data set WORK.INDEX.
NOTE: The data set WORK.COMBINE1 has 2200 observations and 29 variables.
*/

*************************************************************************;
* 3. get the IP admits post randomization (summarization REQUIRED)       ;
*************************************************************************;

data p365_ip_a;
   set toddw.adamc_ip_p365_admits;    /***** <----- *****/
```

```
  * THIS IS USE TO TEST;
  * p365_dcst_tot_ =p365_dcst_tot;
  * p365_ptf_costn_=p365_ptf_costn;
  * p365_ptf_costl_=p365_ptf_costl;

  if not missing(p365_dcst_tot ) then do; %adj_cost14(p365_disday,p365_dcst_tot ); end;
  if not missing(p365_ptf_costn) then do; %adj_cost14(p365_disday,p365_ptf_costn); end;
  if not missing(p365_ptf_costl) then do; %adj_cost14(p365_disday,p365_ptf_costl); end;
run;

proc summary data=p365_ip_a nway missing;
   class scrssn;
   var p365_los p365_dcst_tot p365_ptf_costn p365_ptf_costl p365_ind_impute;
   output out=p365_ip_b (drop=_type_ rename=(_freq_=p365_ip_admits)) sum=;
run;

data combine2;
   merge combine1
         p365_ip_b
   ;
   by scrssn;
   rename p365_los      =p365_ip_days
          p365_dcst_tot =p365_ip_dcst_tot
          p365_ptf_costn=p365_ip_ptf_costn
          p365_ptf_costl=p365_ip_ptf_costl
   ;
   label p365_ip_admits="PostRand IP Admits"
         p365_los      ="PostRand IP Days"
         p365_dcst_tot ="PostRand IP Total Cost (DSS)"
         p365_ptf_costn="PostRand IP COSTN (PTF)"
         p365_ptf_costl="PostRand IP COSTL (PTF)"
   ;
run;

* fill in the missing;
data combine2;
   set combine2;
   array xvar
         p365_ip_admits
         p365_ip_days
         p365_ip_dcst_tot
         p365_ip_ptf_costn
         p365_ip_ptf_costl
   ;
   do over xvar;
      if missing(xvar) then xvar=0;
   end;
run;


*************************************************************************;
* 4. get the OP visits post randomization (summarization REQUIRED)        ;
*************************************************************************;

data opat_se;
   set toddw.adamc_op_p365_visits;   /***** <----- *****/

  * THIS IS USE TO TEST;
  * p365_dss_cost_=p365_dss_cost;
  * p365_se_costn_=p365_se_costn;
  * p365_se_costl_=p365_se_costl;

   if not missing(p365_dss_cost) then do; %adj_cost14(p365_vizday,p365_dss_cost); end;
   if not missing(p365_se_costn) then do; %adj_cost14(p365_vizday,p365_se_costn); end;
   if not missing(p365_se_costl) then do; %adj_cost14(p365_vizday,p365_se_costl); end;
run;

data opat_se_medsurg (drop=chkme)
     opat_se_allother
     opat_se_nomatch (drop=chkme)
```

```
   ;
   set opat_se;
   if rpt eq "INBOTH" then do;
      if not missing(CAT) then output opat_se_medsurg;
         else do;
            if missing(p365_se_costn) then do;
               p365_se_costn=p365_dss_cost;
               p365_se_costl=p365_dss_cost;
               chkme="X";
               output opat_se_allother;
            end;
            else output opat_se_allother;
         end;
   end;
   else output opat_se_nomatch;
run;
/*
NOTE: There were 98309 observations read from the data set WORK.OPAT_SE.
NOTE: The data set WORK.OPAT_SE_MEDSURG has 41139 observations and 12 variables.
NOTE: The data set WORK.OPAT_SE_ALLOTHER has 39788 observations and 13 variables.
NOTE: The data set WORK.OPAT_SE_NOMATCH has 17382 observations and 12 variables.
*/

* MEDSURG DSS;
proc summary data=opat_se_medsurg nway missing;
   class scrssn;
   var p365_dss_cost;
   output out=opat_se_medsurg_dss (drop=_type_ rename=(_freq_=dss_medsurg_visits)) sum=;
run;

* MEDSURG SE;
proc summary data=opat_se_medsurg nway missing;
   class scrssn;
   var p365_se_costn p365_se_costl;
   output out=opat_se_medsurg_se (drop=_type_ rename=(_freq_=se_medsurg_visits)) sum=;
run;

* ALLOTH DSS;
proc summary data=opat_se_allother nway missing;
   class scrssn;
   var p365_dss_cost;
   output out=opat_se_alloth_dss (drop=_type_ rename=(_freq_=dss_alloth_visits)) sum=;
run;

* ALLOTH SE;
proc summary data=opat_se_allother nway missing;
   class scrssn;
   var p365_se_costn p365_se_costl;
   output out=opat_se_alloth_se (drop=_type_ rename=(_freq_=se_alloth_visits)) sum=;
run;

* NOMATCH DSS;
proc summary data=opat_se_nomatch nway missing;
   where (rpt="OPAT ONLY");
   class scrssn;
   var p365_dss_cost;
   output out=opat_se_nomatch_dss (drop=_type_ rename=(_freq_=dss_nomatch_visits)) sum=;
run;

* NOMATCH SE;
proc summary data=opat_se_nomatch nway missing;
   where (rpt="SE ONLY");
   class scrssn;
   var p365_se_costn p365_se_costl;
   output out=opat_se_nomatch_se (drop=_type_ rename=(_freq_=se_nomatch_visits)) sum=;
run;

data combine_op1;
   format scrssn
          dss_medsurg_visits dss_medsurg_cost
          dss_alloth_visits  dss_alloth_cost
```

```
          dss_nomatch_visits dss_nomatch_cost
          dss_total_visits   dss_total_cost
          se_medsurg_visits  se_medsurg_costn se_medsurg_costl
          se_alloth_visits   se_alloth_costn  se_alloth_costl
          se_nomatch_visits  se_nomatch_costn se_nomatch_costl
          se_total_visits    se_total_costn   se_total_costl
   ;
   merge opat_se_medsurg_dss (rename=(p365_dss_cost=dss_medsurg_cost
))
         opat_se_medsurg_se  (rename=(p365_se_costn=se_medsurg_costn
p365_se_costl=se_medsurg_costl))
         opat_se_alloth_dss  (rename=(p365_dss_cost=dss_alloth_cost
))
         opat_se_alloth_se   (rename=(p365_se_costn=se_alloth_costn
p365_se_costl=se_alloth_costl  ))
         opat_se_nomatch_dss (rename=(p365_dss_cost=dss_nomatch_cost
))
         opat_se_nomatch_se  (rename=(p365_se_costn=se_nomatch_costn
p365_se_costl=se_nomatch_costl))
   ;
   by scrssn;
   dss_total_visits=sum(dss_medsurg_visits, dss_alloth_visits, dss_nomatch_visits);
   dss_total_cost  =sum(dss_medsurg_cost,   dss_alloth_cost,   dss_nomatch_cost  );

   se_total_visits =sum(se_medsurg_visits,  se_alloth_visits,  se_nomatch_visits );
   se_total_costn  =sum(se_medsurg_costn,   se_alloth_costn,   se_nomatch_costn  );
   se_total_costl  =sum(se_medsurg_costl,   se_alloth_costl,   se_nomatch_costl  );

   attrib _all_ label="";
run;

/* THE MISSINGS ARE OK
NOTE: Missing values were generated as a result of performing an operation on
      missing values.
      Each place is given by: (Number of times) at (Line):(Column).
      1 at 641:21    1 at 642:21    18 at 643:21   18 at 644:21   18 at 645:21
NOTE: There were 2166 observations read from the data set
      WORK.OPAT_SE_MEDSURG_DSS.
NOTE: There were 2166 observations read from the data set WORK.OPAT_SE_MEDSURG_SE.
NOTE: There were 2161 observations read from the data set WORK.OPAT_SE_ALLOTH_DSS.
NOTE: There were 2161 observations read from the data set WORK.OPAT_SE_ALLOTH_SE.
NOTE: There were 2111 observations read from the data set
      WORK.OPAT_SE_NOMATCH_DSS.
NOTE: There were 691 observations read from the data set WORK.OPAT_SE_NOMATCH_SE.
NOTE: The data set WORK.COMBINE_OP1 has 2191 observations and 21 variables.
*/

data combine3;
   merge combine2
         combine_op1
   ;
   by scrssn;
run;

* FILL IN MISSING;
%let costlist=dss_medsurg_cost
              dss_alloth_cost
              dss_nomatch_cost
              dss_total_cost
              se_medsurg_costn
              se_medsurg_costl
              se_alloth_costn
              se_alloth_costl
              se_nomatch_costn
              se_nomatch_costl
              se_total_costn
              se_total_costl
              ;
%let utillist=dss_medsurg_visits
              dss_alloth_visits
              dss_nomatch_visits
```

```
             dss_total_visits
             se_medsurg_visits
             se_alloth_visits
             se_nomatch_visits
             se_total_visits
             ;

data combine3;
   set combine3;
   array cost_ &costlist;
   array util_ &utillist;
   do over cost_;
      if missing(cost_) then cost_=0;
      cost_=round(cost_,0.01);
   end;
   do over util_;
      if missing(util_) then util_=0;
   end;
   format &costlist dollar10.2;
run;

* rename the variables;
data combine3;
   set combine3;
   rename dss_medsurg_visits=p365_op_dss_medsurg_visits
          dss_medsurg_cost  =p365_op_dss_medsurg_cost
          dss_alloth_visits =p365_op_dss_alloth_visits
          dss_alloth_cost   =p365_op_dss_alloth_cost
          dss_nomatch_visits=p365_op_dss_nomatch_visits
          dss_nomatch_cost  =p365_op_dss_nomatch_cost
          dss_total_visits  =p365_op_dss_total_visits
          dss_total_cost    =p365_op_dss_total_cost
          se_medsurg_visits =p365_op_se_medsurg_visits
          se_medsurg_costn  =p365_op_se_medsurg_costn
          se_medsurg_costl  =p365_op_se_medsurg_costl
          se_alloth_visits  =p365_op_se_alloth_visits
          se_alloth_costn   =p365_op_se_alloth_costn
          se_alloth_costl   =p365_op_se_alloth_costl
          se_nomatch_visits =p365_op_se_nomatch_visits
          se_nomatch_costn  =p365_op_se_nomatch_costn
          se_nomatch_costl  =p365_op_se_nomatch_costl
          se_total_visits   =p365_op_se_total_visits
          se_total_costn    =p365_op_se_total_costn
          se_total_costl    =p365_op_se_total_costl
   ;
   label dss_medsurg_visits="PostRand OP DSS MEDSURG Visits"
         dss_medsurg_cost  ="PostRand OP DSS MEDSURG Cost"
         dss_alloth_visits ="PostRand OP DSS ALLOTH Visits"
         dss_alloth_cost   ="PostRand OP DSS ALLOTH Cost"
         dss_nomatch_visits="PostRand OP DSS NOMATCH Visits"
         dss_nomatch_cost  ="PostRand OP DSS NOMATCH Cost"
         dss_total_visits  ="PostRand OP DSS TOTAL Visits"
         dss_total_cost    ="PostRand OP DSS TOTAL Cost"
         se_medsurg_visits ="PostRand OP SE MEDSURG Visits"
         se_medsurg_costn  ="PostRand OP SE MEDSURG COSTN"
         se_medsurg_costl  ="PostRand OP SE MEDSURG COSTL"
         se_alloth_visits  ="PostRand OP SE ALLOTH Visits"
         se_alloth_costn   ="PostRand OP SE ALLOTH COSTN"
         se_alloth_costl   ="PostRand OP SE ALLOTH COSTL"
         se_nomatch_visits ="PostRand OP SE NOMATCH Visits"
         se_nomatch_costn  ="PostRand OP SE NOMATCH COSTN"
         se_nomatch_costl  ="PostRand OP SE NOMATCH COSTL"
         se_total_visits   ="PostRand OP SE TOTAL Visits"
         se_total_costn    ="PostRand OP SE TOTAL COSTN"
         se_total_costl    ="PostRand OP SE TOTAL COSTL"
   ;
run;

************************************************************************;
* 5. get the OP visits post randomization (summarization REQUIRED)     ;
************************************************************************;
```

```
data rx_1;
   set toddw.adamc_rx_p365_scripts;   /***** <----- *****/

  * THIS IS USE TO TEST;
  * p365_dss_rx_costs_=p365_dss_rx_costs;

   if not missing(p365_dss_rx_costs) then do; %adj_cost14(vizday,p365_dss_rx_costs); end;
run;

proc summary data=rx_1 nway missing;
   class scrssn va_class;
   var p365_dss_rx_scripts p365_dss_rx_costs;
   output out=rx_2 (drop=_type_ _freq_) sum=;
run;
proc summary data=rx_2 nway missing;
   class scrssn;
   var p365_dss_rx_scripts p365_dss_rx_costs;
   output out=rx_2 (drop=_type_ rename=(_freq_=num_va_class)) sum=;
run;
data rx_2;
   set rx_2;
   rename num_va_class       =p365_rx_dss_vaclass
          p365_dss_rx_scripts=p365_rx_dss_scripts
          p365_dss_rx_costs  =p365_rx_dss_cost
   ;
   format p365_dss_rx_costs dollar10.2;
   label num_va_class       ="PostRand Rx DSS VACLASS (unique)"
         p365_dss_rx_scripts="PostRand Rx DSS Scripts"
         p365_dss_rx_costs  ="PostRand Rx DSS Cost"
   ;
run;

data combine4;
   merge combine3 (in=in1)
         rx_2     (in=in2)
   ;
   by scrssn;
   if not in2 then do;
      p365_rx_dss_vaclass=0;
      p365_rx_dss_scripts=0;
      p365_rx_dss_cost   =0;
   end;
run;


*************************************************************************;
* 6. get the total cost                                                 ;
*************************************************************************;

/* get the TOTAL -- but what are the variables;
proc contents data=combine4 out=pc varnum noprint;
run;
proc sort data=pc;
   by varnum;
run;
*/

data combine5;
   set combine4;
   if not (substr(idx_desc,1,1) = " " or  idx_src_desc="PTF MAIN ONLY") then do;
      total_dss_cost=sum(idx_dcst_tot,
                         p365_ip_dcst_tot,
                         p365_op_dss_total_cost,
                         p365_rx_dss_cost
                        );
      total_costn_wo_rx = sum(idx_ptf_costn,
                              p365_ip_ptf_costn,
                              p365_op_se_total_costn
                             );
      total_costl_wo_rx = sum(idx_ptf_costl,
```

```
                              p365_ip_ptf_costl,
                              p365_op_se_total_costl
                             );
   end;
   format total_dss_cost
          total_costn_wo_rx
          total_costl_wo_rx dollar12.2
   ;
   label total_dss_cost   ="TOTAL DSS Cost"
         total_costn_wo_rx="TOTAL COSTN w/o Rx"
         total_costl_wo_rx="TOTAL COSTL w/o Rx"
   ;
run;


*************************************************************************;
* 7. id the questionalable records                                      ;
*************************************************************************;

data combine6;
   format onpump ind_concern ind_ctr_573_688;
   set combine5;
   ind_concern    =0;
   ind_ctr_573_688=0;
   if substr(idx_desc,1,1) = " "   then ind_concern=1;
   if idx_src_desc="PTF MAIN ONLY" then ind_concern=1;

  * DECIDED NOT TO INCLUDE THIS;
  * if not missing(p365_ind_impute) then ind_concern=1;

   if center in (573,688) then ind_ctr_573_688=1;
   label ind_concern    ="Ind 0/1 Record of Concern"
         ind_ctr_573_688="Ind 0/1 Center 573/688"
   ;
run;

*************************************************************************;
* 8. 1/17/2012 ... distance                                             ;
*************************************************************************;

data combine7;
   merge combine6
         toddw.adamc_distance_va     /***** <----- *****/
   ;
   by scrssn;

  * RE-LABEL;
   label dist_avg="Avg. Distance (MILES)";
run;

*************************************************************************;
* 9. get the death info just in case ToddW needs it                     ;
*************************************************************************;

proc sql;
   create table combine8 as
   select a.*,
          b.dod as dod_baseline label="Date of Death (Baseline)"
   from combine7 as a,
        toddw.baseline as b     /***** <----- *****/
   where a.scrssn eq b.scrssn
   ;
quit;

proc sql;
   create table combine9 as
   select a.*,
          b.dod as dod_vital label="Date of Death (VITAL MINI) ***OLD***"
   from combine8 as a,
        toddw._vital_mini as b    /***** <----- *****/
   where a.scrssn eq b.scrssn
```

```
   ;
quit;

*************************************************************************;
* 10. output to WORK                                                    ;
*************************************************************************;

data &outf_;
   set combine9;
run;

*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********00_inflation_factors_cpi.sas**********
*************************************************************************;
* Name: /export/data/avgcost/csp517/00_inflation_factors_cpi.sas         ;
*                                                                       ;
* Description:  cpi inflation factors (Table 24, page 72 September 2011)  ;
*               1/23/2013 from                                          ;
*                   ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt  ;
*               4/30/2014 from                                          ;
*                   http://www.bls.gov/cpi/cpid1312.pdf  (Table 24)       ;
*                                                                       ;
* Input:                                                                ;
*                                                                       ;
* Output:                                                               ;
*                                                                       ;
* Ext.Macros:                                                           ;
*                                                                       ;
* Run Under:  SAS 9.2 for Unix                                          ;
*                                                                       ;
* Date      Author    Modification History                              ;
* ------------------------------------------------------------------------;
* 31OCT11   AdamC     Halloween                                         ;
* 23JAN12   AdamC     ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt;
* 30APR14   AdamC     http://www.bls.gov/cpi/cpid1312.pdf  (Table 24)     ;
* 08SEP15   Howard Jiang  http://www.bls.gov/cpi/cpid1412.pdf  (Table 24) ;
*************************************************************************;

options ps=70 ls=82 nodate nosymbolgen nomprint;

%let cpi2000 = 172.2;
%let cpi2001 = 177.1;
%let cpi2002 = 179.9;
%let cpi2003 = 184.0;
%let cpi2004 = 188.9;
%let cpi2005 = 195.3;
%let cpi2006 = 201.6;
%let cpi2007 = 207.342;
%let cpi2008 = 215.303;
%let cpi2009 = 214.537;
%let cpi2010 = 218.056;
%let cpi2011 = 224.939;   /*** ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt ***/
%let cpi2012 = 229.594;   /*** ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt ***/
%let cpi2013 = 232.957;   /*** http://www.bls.gov/cpi/cpid1312.pdf       (Table 24) ***/
%let cpi2014 = 236.736;   /*** http://www.bls.gov/cpi/cpid1412.pdf (Table 24, 2014 Annual Avg.,
p.75) ***/

%macro adj_cost10(util, adj_cost);
   if        year(&util)=2000 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2000, 0.01);
     else if year(&util)=2001 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2001, 0.01);
     else if year(&util)=2002 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2002, 0.01);
     else if year(&util)=2003 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2003, 0.01);
     else if year(&util)=2004 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2004, 0.01);
     else if year(&util)=2005 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2005, 0.01);
     else if year(&util)=2006 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2006, 0.01);
     else if year(&util)=2007 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2007, 0.01);
     else if year(&util)=2008 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2008, 0.01);
     else if year(&util)=2009 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2009, 0.01);
     else if year(&util)=2010 then &adj_cost=round(&adj_cost * &cpi2010 / &cpi2010, 0.01);
```

```
%mend;

%macro adj_cost12(util, adj_cost);
   if        year(&util)=2000 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2000, 0.01);
     else if year(&util)=2001 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2001, 0.01);
     else if year(&util)=2002 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2002, 0.01);
     else if year(&util)=2003 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2003, 0.01);
     else if year(&util)=2004 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2004, 0.01);
     else if year(&util)=2005 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2005, 0.01);
     else if year(&util)=2006 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2006, 0.01);
     else if year(&util)=2007 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2007, 0.01);
     else if year(&util)=2008 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2008, 0.01);
     else if year(&util)=2009 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2009, 0.01);
     else if year(&util)=2010 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2010, 0.01);
     else if year(&util)=2011 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2011, 0.01);
     else if year(&util)=2012 then &adj_cost=round(&adj_cost * &cpi2012 / &cpi2012, 0.01);
%mend;

%macro adj_cost13(util, adj_cost);
   if        year(&util)=2000 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2000, 0.01);
     else if year(&util)=2001 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2001, 0.01);
     else if year(&util)=2002 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2002, 0.01);
     else if year(&util)=2003 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2003, 0.01);
     else if year(&util)=2004 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2004, 0.01);
     else if year(&util)=2005 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2005, 0.01);
     else if year(&util)=2006 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2006, 0.01);
     else if year(&util)=2007 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2007, 0.01);
     else if year(&util)=2008 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2008, 0.01);
     else if year(&util)=2009 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2009, 0.01);
     else if year(&util)=2010 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2010, 0.01);
     else if year(&util)=2011 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2011, 0.01);
     else if year(&util)=2012 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2012, 0.01);
     else if year(&util)=2013 then &adj_cost=round(&adj_cost * &cpi2013 / &cpi2013, 0.01);
%mend;

%macro adj_cost14(util, adj_cost);
   if        year(&util)=2000 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2000, 0.01);
     else if year(&util)=2001 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2001, 0.01);
     else if year(&util)=2002 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2002, 0.01);
     else if year(&util)=2003 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2003, 0.01);
     else if year(&util)=2004 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2004, 0.01);
     else if year(&util)=2005 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2005, 0.01);
     else if year(&util)=2006 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2006, 0.01);
     else if year(&util)=2007 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2007, 0.01);
     else if year(&util)=2008 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2008, 0.01);
     else if year(&util)=2009 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2009, 0.01);
     else if year(&util)=2010 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2010, 0.01);
     else if year(&util)=2011 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2011, 0.01);
     else if year(&util)=2012 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2012, 0.01);
     else if year(&util)=2013 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2013, 0.01);
     else if year(&util)=2014 then &adj_cost=round(&adj_cost * &cpi2014 / &cpi2014, 0.01);
%mend;



* this is to test the macro;
%macro skipit;
   data a;
       format a mmddyy10.;
       a="02JAN2000"d; xcost=100; output;
       a="03FEB2001"d; xcost=100; output;
       a="04MAR2002"d; xcost=100; output;
       a="05APR2003"d; xcost=100; output;
       a="06MAY2004"d; xcost=100; output;
       a="02JUN2005"d; xcost=100; output;

       a="10JUL2006"d; xcost=100; output;
       a="11AUG2007"d; xcost=100; output;
       a="12SEP2008"d; xcost=100; output;
       a="21OCT2009"d; xcost=100; output;
       a="22NOV2010"d; xcost=100; output;
```

```
       a="23DEC2011"d; xcost=100; output;
       a="28JUN2012"d; xcost=100; output;
       a="23SEP2013"d; xcost=100; output;
       a="25SEP2014"d; xcost=100; output;
   run;
   data b;
      set a;
      xcost_old=xcost;
      xcost_   =xcost;
      xcost__  =xcost;
      xcost___ =xcost;
      %adj_cost10(a, xcost);
      %adj_cost12(a, xcost_);
      %adj_cost13(a, xcost__);
      %adj_cost14(a, xcost___);
   run;
proc print data=b; run;
%mend skipit;
**********31a_extract_datasets_FY14.sas**********
********************************************************************************;
* Name: /export/data/avgcost/csp517/31a_extract_datasets_FY14.sas         ;
*                                                                         ;
* Description:  extract datasets per Todd W email Fri 4/28/2014           ;
*               (modified prog 21)                                        ;
*               extract datasets per Todd W email Tue 9/8/2015            ;
*               (modified prog 29a) -HJ                                   ;
*                                                                         ;
* Input:  toddw.csp517herc_id                                             ;
*         /static/austin/dss/fy14/disch14.sas7bdat                        ;
*         /static/austin/dss/fy14/opat14.sas7bdat                         ;
*         /static/austin/dss/fy14/opat214.sas7bdat                        ;
*         /static/austin/dss/fy14/ph_opat14.sas7bdat                      ;
*         /static/austin/dss/fy14/ph_opat214.sas7bdat                     ;
*         /static/austin/dss/fy14/clinical/ph_rxo14.sas7bdat              ;
*         /static/austin/ptf/fy14/pm14.sas7bdat                           ;
*         /static/austin/ptf/fy14/pmo14.sas7bdat                          ;
*         /static/austin/ptf/fy14/xm14.sas7bdat                           ;
*         /static/austin/ptf/fy14/pp14.sas7bdat                           ;
*         /static/austin/ptf/fy14/ps14.sas7bdat                           ;
*         /static/austin/ptf/fy14/xp14.sas7bdat   (ADDED)                 ;
*         /static/austin/ptf/fy14/xs14.sas7bdat   (ADDED)                 ;
*         /static/austin/ptf/fy14/ppo14.sas7bdat  (ADDED)                 ;
*         /static/austin/npcd/fy14/se14.sas7bdat                          ;
*         /static/austin/fen/fy14/fenmed14.sas7bdat                       ;
*         /static/austin/fen/fy14/feninpt14.sas7bdat                      ;
*         /static/austin/fen/fy14/fenipancil14.sas7bdat                   ;
*         /static/austin/vital/vitalstatus_mini.sas7bdat                  ;
*                                                                         ;
* Output:  toddw._disch14                                                 ;
*          toddw._opat14_w_low_cost                                       ;
*          toddw._ph_opat14_w_low_cost                                    ;
*          toddw._ph_rxo14                                                ;
*          toddw._ptf_main14                                              ;
*          toddw._ptf_pp14                                                ;
*          toddw._ptf_ps14                                                ;
*          toddw._ptf_xp_ppo_14                                           ;
*          toddw._ptf_xs_14                                               ;
*          toddw._se14                                                    ;
*          toddw._fb_med14                                                ;
*          toddw._fb_inpt14                                               ;
*          toddw._fb_ipancil14                                            ;
*          toddw._vital_mini_31dec2014                                    ;
*                                                                         ;
* Ext.Macros: Yes, EXTRACTME                                              ;
*                                                                         ;
* Run Under:  SAS 9.2 for Unix                                            ;
*                                                                         ;
* Date      Author    Modification History                                ;
* ------------------------------------------------------------------------;
* 01MAY14   AdamC     Code lifted from Prog 21                            ;
```

```
* 05MAY14   AdamC     Add code from prog 21B (XP, XS, PPO)               ;
* 09SEP15   Howard Jiang   Code lifted from Prog 29a                    ;
*************************************************************************;

* Extraction Macro;
%include "/export/data/herc/programs/extractme.sas";

options ps=70 ls=82 nodate nosymbolgen nomprint;

* THIS IS COMMENT OUT 5/1/2014 -- NO LONGER APPLIES AS IT WAS MOVED;
* libname toddw  "/export/data/avgcost/csp517/datasets";

libname toddw  "/export/data/csp517/csp517/datasets";   /*** THIS WAS MOVED -- NEW LOCATION ***/
*libname ptffmt "/static/data/sasfmt/ptffmt";
libname library "/static/data/sasfmt/ptffmt";

/*
libname dss00   "/static/austin/dss/fy00";
libname dss01   "/static/austin/dss/fy01";
libname dss02   "/static/austin/dss/fy02";
libname dss03   "/static/austin/dss/fy03";
libname dss04   "/static/austin/dss/fy04";
libname dss05   "/static/austin/dss/fy05";
libname dss06   "/static/austin/dss/fy06";
libname dss07   "/static/austin/dss/fy07";
libname dss08   "/static/austin/dss/fy08";
libname dss09   "/static/austin/dss/fy09";
libname dss10   "/static/austin/dss/fy10";
libname dss11   "/static/austin/dss/fy11";
libname dss12   "/static/austin/dss/fy12";
libname dss13   "/static/austin/dss/fy13";
*/
libname dss14   "/static/austin/dss/fy14";

/*
libname dssrx00 "/static/austin/dss/fy00/clinical";
libname dssrx01 "/static/austin/dss/fy01/clinical";
libname dssrx02 "/static/austin/dss/fy02/clinical";
libname dssrx03 "/static/austin/dss/fy03/clinical";
libname dssrx04 "/static/austin/dss/fy04/clinical";
libname dssrx05 "/static/austin/dss/fy05/clinical";
libname dssrx06 "/static/austin/dss/fy06/clinical";
libname dssrx07 "/static/austin/dss/fy07/clinical";
libname dssrx08 "/static/austin/dss/fy08/clinical";
libname dssrx09 "/static/austin/dss/fy09/clinical";
libname dssrx10 "/static/austin/dss/fy10/clinical";
libname dssrx11 "/static/austin/dss/fy11/clinical";
libname dssrx12 "/static/austin/dss/fy12/clinical";
libname dssrx13 "/static/austin/dss/fy13/clinical";
*/
libname dssrx14 "/static/austin/dss/fy14/clinical";

/*
libname ptf00   "/static/austin/ptf/fy00";
libname ptf01   "/static/austin/ptf/fy01";
libname ptf02   "/static/austin/ptf/fy02";
libname ptf03   "/static/austin/ptf/fy03";
libname ptf04   "/static/austin/ptf/fy04";
libname ptf05   "/static/austin/ptf/fy05";
libname ptf06   "/static/austin/ptf/fy06";
libname ptf07   "/static/austin/ptf/fy07";
libname ptf08   "/static/austin/ptf/fy08";
libname ptf09   "/static/austin/ptf/fy09";
libname ptf10   "/static/austin/ptf/fy10";
libname ptf11   "/static/austin/ptf/fy11";
libname ptf12   "/static/austin/ptf/fy12";
libname ptf13   "/static/austin/ptf/fy13";
*/
libname ptf14   "/static/austin/ptf/fy14";

/*
```

```
libname npcd00  "/static/austin/npcd/fy00";
libname npcd01  "/static/austin/npcd/fy01";
libname npcd02  "/static/austin/npcd/fy02";
libname npcd03  "/static/austin/npcd/fy03";
libname npcd04  "/static/austin/npcd/fy04";
libname npcd05  "/static/austin/npcd/fy05";
libname npcd06  "/static/austin/npcd/fy06";
libname npcd07  "/static/austin/npcd/fy07";
libname npcd08  "/static/austin/npcd/fy08";
libname npcd09  "/static/austin/npcd/fy09";
libname npcd10  "/static/austin/npcd/fy10";
libname npcd11  "/static/austin/npcd/fy11";
libname npcd12  "/static/austin/npcd/fy12";
libname npcd13  "/static/austin/npcd/fy13";
*/
libname npcd14  "/static/austin/npcd/fy14";

/*
libname fb00  "/static/austin/fen/fy00";
libname fb01  "/static/austin/fen/fy01";
libname fb02  "/static/austin/fen/fy02";
libname fb03  "/static/austin/fen/fy03";
libname fb04  "/static/austin/fen/fy04";
libname fb05  "/static/austin/fen/fy05";
libname fb06  "/static/austin/fen/fy06";
libname fb07  "/static/austin/fen/fy07";
libname fb08  "/static/austin/fen/fy08";
libname fb09  "/static/austin/fen/fy09";
libname fb10  "/static/austin/fen/fy10";
libname fb11  "/static/austin/fen/fy11";
libname fb12  "/static/austin/fen/fy12";
libname fb13  "/static/austin/fen/fy13";
*/
libname fb14  "/static/austin/fen/fy14";

libname vital  "/static/austin/vital";                /*** VITALSTATUS ***/

*************************************************************************;
* 0. examine CSP517HERC_ID                                              ;
*************************************************************************;

* check SCRSSN;
proc sort data=toddw.csp517herc_id
          out =coh_chk1;
   by scrssn;
run;
data coh_chk1;
   set coh_chk1;
   by scrssn;
   if not (first.scrssn and last.scrssn);
run;
/*
NOTE: There were 2203 observations read from the data set WORK.COH_CHK1.
NOTE: The data set WORK.COH_CHK1 has 3 observations and 4 variables.
*/

* check SSN;
proc sort data=toddw.csp517herc_id
          out =coh_chk2;
   by ssn;
run;
data coh_chk2;
   set coh_chk2;
   by ssn;
   if not (first.ssn and last.ssn);
run;

* check PATIENT;
proc sort data=toddw.csp517herc_id
          out =coh_chk3;
   by patient;
```

```
run;
data coh_chk3;
   set coh_chk3;
   by patient;
   if not (first.patient and last.patient);
run;
/*  patient # is unique to the center (hospital code) -- can repeat  in other centers
NOTE: There were 2203 observations read from the data set WORK.COH_CHK3.
NOTE: The data set WORK.COH_CHK3 has 1986 observations and 4 variables.
*/

* check CENTER (HOSPITAL CODE);
proc sort data=toddw.csp517herc_id
          out =coh_chk4;
   by patient center;
run;
data coh_chk4;
   set coh_chk4;
   by patient center ;
   if not (first.center and last.center);
run;

* get the cohort file -- drop 3 patients because of MISSING;
data coh;
   set toddw.csp517herc_id (rename=(scrssn=scrssn_orig));
   if ssn ne "";
   scrssn=input(scrssn_orig,9.);
   keep scrssn_orig scrssn;
run;
/*
NOTE: There were 2203 observations read from the data set TODDW.CSP517HERC_ID.
NOTE: The data set WORK.COH has 2200 observations and 2 variables.
*/

proc print data=coh_chk1 noobs label;
   title1 "CSP 517 -- checking dataset CSP517HERC_ID -- missing SCRSSN";
   title2 "CSP517HERC_ID has 2203 Obs";
run;

* check the center;
proc summary data=toddw.csp517herc_id nway missing;
   where ssn ne "";
   class center scrssn;
   output out=coh_chk5 (drop=_type_ rename=(_freq_=recs));
run;
proc summary data=coh_chk5 nway missing;
   class center;
   var recs;
   output out=coh_chk6 (drop=_type_ rename=(_freq_=pats)) sum=;
run;

options formdlim="*";
proc print data=coh_chk6 noobs label;
   title1 "CSP 517 -- checking dataset CSP517HERC_ID";
   title2 "Summarizing on CENTER (Hospital Code) -- EXCLUDED Those With Missing SSN";
   title3 "EXCLUDE Missing SSN";
   label pats="# Unique Patients"
         recs="# Records"
   ;
   format pats recs comma8.;
   sum pats recs;
run;
options formdlim="";

*************************************************************************;
* 1. extract DISCH14                                                    ;
*************************************************************************;

%extractme(coh, dss14.disch14, DISCH, 2014, x_disch14);

%let droplsta=bornday;
```

```
%let droplstb=bornday enc_num;
%let droplstc=enc_num;

data _disch14;
   set x_disch14 (in=in14 drop=&droplstb rename=(dbedsect=dbedsect_org_char));
   length dbedsect_char $2;
   dbedsect_char=dbedsect_org_char;
run;

data toddw._disch14 (compress=yes);
   set _disch14;
run;


*************************************************************************;
* 2. extract OPAT14 and OPAT214                                         ;
*************************************************************************;

%extractme(coh, dss14.opat14,  OPAT,  2014, x_opat14 );
%extractme(coh, dss14.opat214, OPAT2, 2014, x_opat214);

* FIX OTHERWISE MULTIPLE LENGTH PROBLEM;
data tmplate_a;
   length PCPT_DSS $16
          PRIMCPT4 $16
          STA6A    $28
          enc_num  $20
          rad_vl5  8.
   ;
   PCPT_DSS="";
   PRIMCPT4="";
   STA6A   ="";
   enc_num ="";
   rad_vl5 =.;
   output;
run;

%let droplstd=county oifoef;
%let droplste=county oefoif;
%let droplstf=county;
data opat_w_low_cost;
   set tmplate_a (in=int                 )
       x_opat14  (in=in14  drop=&droplste)
       x_opat214 (in=in214 drop=&droplste)
   ;
   if not int;
run;

data  toddw._opat14_w_low_cost (compress=yes);
   set opat_w_low_cost;
run;


*************************************************************************;
* 3A. extract PH_OPAT14 and PH_OPAT214                                  ;
*************************************************************************;

%extractme(coh, dss14.ph_opat14,  PH_OPAT,  2014, x_ph_opat14 );
%extractme(coh, dss14.ph_opat214, PH_OPAT2, 2014, x_ph_opat214);

* USE THE SAME DROPLIST AND TEMPLATE AS IN OPAT;
data ph_opat14_w_low_cost;
   set tmplate_a    (in=int                 )
       x_ph_opat14  (in=in14  drop=&droplste)
       x_ph_opat214 (in=in214 drop=&droplste)
   ;
   if not int;
run;

data toddw._ph_opat14_w_low_cost (compress=yes);
   set ph_opat14_w_low_cost;
```

```
run;


*************************************************************************;
* 3B. extract PH_RXO14                                                  ;
*************************************************************************;

%extractme(coh, dssrx14.ph_rxo14, PH_RXO, 2014, x_ph_rxo14);

* FIX OTHERWISE MULTIPLE LENGTH PROBLEM -- this is a left over from Prog 01C;
data tmplate__;
   length DXCODE   $9
          DRUGDESC $63
          vizday   5.
   ;
   DXCODE  ="";
   DRUGDESC="";
   vizday  =.;
   output;
run;

data toddw._ph_rxo14 (compress=yes);
   set x_ph_rxo14 (drop=county);
run;


*************************************************************************;
* 4A. extract PTF Main FY14                                             ;
*************************************************************************;

%extractme(coh, ptf14.pm14,  PM,  2014, x_pm14 );
%extractme(coh, ptf14.pmo14, PMO, 2014, x_pmo14);
%extractme(coh, ptf14.xm14,  XM,  2014, x_xm14 );

* FIX OTHERWISE MULTIPLE LENGTH PROBLEM;
data tmplate_d;
   length DBEDSECT  4.
          PLDISCH   4.
          ENVCARE  $8.
          INCOME    5.
   ;
   DBEDSECT=.;
   PLDISCH =.;
   ENVCARE ="";
   INCOME  =.;
   output;
run;

* USE THE SAME DROPLIST AND TEMPLATE AS IN OPAT;
data ptf_main_14;
   set tmplate_d (in=int)
       x_pm14
       x_pmo14
       x_xm14
   ;
   if not int;
run;

data toddw._ptf_main14 (compress=yes);
   set ptf_main_14;
run;

*************************************************************************;
* 4B. extract PTF PP and PS (prog 01B)                                  ;
*************************************************************************;

%extractme(coh, ptf14.pp14,  PP,  2014, x_pp14);
%extractme(coh, ptf14.ps14,  PS,  2014, x_ps14);

* PP - FIX OTHERWISE MULTIPLE LENGTH PROBLEM;
data template_pp;
```

```
   length BEDSECN  4.;
   BEDSECN=.;
   output;
run;

data ptf_pp_14;
   set template_pp (in=int)
       x_pp14
   ;
   if not int;
run;

data toddw._ptf_pp14 (compress=yes);
   set ptf_pp_14;
run;

* PS - FIX OTHERWISE MULTIPLE LENGTH PROBLEM;
data template_ps;
   length SURGSPEC  4.;
   SURGSPEC=.;
   output;
run;

data ptf_ps_14;
   set template_ps (in=int)
       x_ps14
   ;
   if not int;
run;

data toddw._ptf_ps14 (compress=yes);
   set ptf_ps_14;
run;

*************************************************************************;
* 4C. extract PTF XP and XS and PPO (added 4/5/2014)                    ;
*************************************************************************;

%extractme(coh, ptf14.xp14,   XP,   2014, x_xp14 );
%extractme(coh, ptf14.xs14,   XS,   2014, x_xs14 );
%extractme(coh, ptf14.ppo14,  PPO,  2014, x_ppo14);

data toddw._ptf_xp_ppo_14;
   set x_xp14
       x_ppo14
   ;
run;

data toddw._ptf_xs_14;
   set x_xs14
   ;
run;

*************************************************************************;
* 5. extract SE14                                                       ;
*************************************************************************;

%extractme(coh, npcd14.se14,  SE,  2014, x_se14);

%let rnm1 = prov1 =prov1_num
            prov2 =prov2_num
            prov3 =prov3_num
            prov4 =prov4_num
            prov5 =prov5_num
            prov6 =prov6_num
            prov7 =prov7_num
            prov8 =prov8_num
            prov9 =prov9_num
            prov10=prov10_num
          ;
%let rnm2 = prov1 =prov1_char
```

```
            prov2 =prov2_char
            prov3 =prov3_char
            prov4 =prov4_char
            prov5 =prov5_char
            prov6 =prov6_char
            prov7 =prov7_char
            prov8 =prov8_char
            prov9 =prov9_char
            prov10=prov10_char
           ;
%let rnm3 = encounter_id=encounter_id_num
           ;
%let rnm4 = encounter_id=encounter_id_char
           ;
* FIX OTHERWISE MULTIPLE LENGTH PROBLEM;
data tmplate_f;
   length DXLSF
          DXF2
          DXF3
          DXF4
          DXF5
          DXF6
          DXF7
          DXF8
          DXF9
          DXF10 $6
   ;
   DXLSF="";
   DXF2 ="";
   DXF3 ="";
   DXF4 ="";
   DXF5 ="";
   DXF6 ="";
   DXF7 ="";
   DXF8 ="";
   DXF9 ="";
   DXF10="";
   output;
run;

data se14;
   set tmplate_f (in=int                       )
       x_se14    (in=in14 rename=(&rnm2 &rnm4))
   ;
   if not int;
   length prov1
          prov2
          prov3
          prov4
          prov5
          prov6
          prov7
          prov8
          prov9
          prov10 $6
          encounter_id $15
   ;
   if in14 then do;
      if not missing(prov1_char)  then prov1 =prov1_char;
      if not missing(prov2_char)  then prov2 =prov2_char;
      if not missing(prov3_char)  then prov3 =prov3_char;
      if not missing(prov4_char)  then prov4 =prov4_char;
      if not missing(prov5_char)  then prov5 =prov5_char;
      if not missing(prov6_char)  then prov6 =prov6_char;
      if not missing(prov7_char)  then prov7 =prov7_char;
      if not missing(prov8_char)  then prov8 =prov8_char;
      if not missing(prov9_char)  then prov9 =prov9_char;
      if not missing(prov10_char) then prov10=prov10_char;

      encounter_id=encounter_id_char;
   end;
```

```
run;

data toddw._se14 (compress=yes);
   set se14;
run;

*************************************************************************;
* 6. extract Fee Basis FY14                                             ;
*************************************************************************;

* OUTPATIENT;
%extractme(coh, fb14.fenmed14, FeeBasis MED, 2014, x_fb_med14);

data med_tmplate;
   length VEN13N   $30
          OBNUM    $100
          SUSCODE  $2
          EFTNO    $15
          CANRSN   $2
          VENSITEN $15
   ;
   VEN13N  ="";
   OBNUM   ="";
   SUSCODE ="";
   EFTNO   ="";
   CANRSN  ="";
   VENSITEN="";
   output;
run;

data fb_med14;
   set med_tmplate (in=inmed)
       x_fb_med14  (in=in14)
   ;
   if not inmed;
run;

data toddw._fb_med14 (compress=yes);   /*** <----- ***/
   set fb_med14;
run;

* INPATIENT;
%extractme(coh, fb14.feninpt14, FeeBasis INPT, 2014, x_fb_inpt14);

data inpt_tmplate;
   length VEN13N   $30
          OBNUM    $100
          SUSCODE  $2
          DHCP     $30
          EFTNO    $15
          CANRSN   $2
          VENSITEN $15
   ;
   VEN13N  ="";
   OBNUM   ="";
   SUSCODE ="";
   DHCP    ="";
   EFTNO   ="";
   CANRSN  ="";
   VENSITEN="";
   output;
run;

data fb_inpt14;
   set inpt_tmplate (in=inip)
       x_fb_inpt14  (in=in14)
   ;
   if not inip;
run;

data toddw._fb_inpt14 (compress=yes);   /*** <----- ***/
```

```
   set fb_inpt14;
run;

* INPATIENT ANCILLARY;
%extractme(coh, fb14.fenipancil14, FeeBasis INPT ANC, 2014, x_fb_ipancil14);

data ipancil_tmplate;
   length VEN13N   $30
          OBNUM    $100
          SUSCODE  $2
          EFTNO    $15
          CANRSN   $2
          VENSITEN $15
   ;
   VEN13N  ="";
   OBNUM   ="";
   SUSCODE ="";
   EFTNO   ="";
   CANRSN  ="";
   VENSITEN="";
   output;
run;

data fb_inancil14;
   set ipancil_tmplate (in=inipanc)
       x_fb_ipancil14  (in=in14   )
   ;
   if not inipanc;
run;

data toddw._fb_ipancil14 (compress=yes);    /*** <----- ***/
   set fb_inancil14;
run;

*************************************************************************;
* 7. VITAL                                                              ;
*************************************************************************;

%extractme(coh,                    /* (Required) Your Cohort Dataset         */
           vital.vitalstatus_mini, /* (Required) Dataset you want to extract */
           VITAL MINI,             /* (Optional) Short description length 20 */
           .,                      /* (Required) Number FY or SAS missing .  */
           vital_mini              /* (Required) Name of extracted dataset   */
          );

data toddw._vital_mini_31dec2014;     /*** <----- ***/
   set vital_mini;
run;


*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********31b_chk_vital_31DEC2014.sas**********
*************************************************************************;
* Name: /export/data/avgcost/csp517/31b_chk_vital_31DEC2014.sas          ;
*                                                                        ;
* Description:  check vital time stamped 31DEC2014                       ;
*                (modified from prog 29b -HJ)                            ;
*                                                                        ;
* Input:  toddw._vital_mini_31oct2012                                    ;
*         toddw._vital_mini_12jun2013                                    ;
*         toddw._vital_mini_24mar2014                                    ;
*         toddw._vital_mini_31dec2014                                    ;
*                                                                        ;
* Output:                                                                ;
*                                                                        ;
* Ext.Macros: NO                                                         ;
*                                                                        ;
* Run Under:  SAS 9.2 for Unix                                           ;
*                                                                        ;
```

```
* Date      Author    Modification History                                  ;
* ----------------------------------------------------------------------;
* 05MAY14   AdamC                                                        ;
* 09SEP15   Howard Jiang  Modified                                       ;
************************************************************************;

options ps=70 ls=170 nodate nonumber nosymbolgen nomprint;

libname toddw  "/export/data/csp517/csp517/datasets";
libname library "/static/data/sasfmt/ptffmt";

************************************************************************;
************************************************************************;

data chk1;
  set toddw._vital_mini_31oct2012 (in=in1)
      toddw._vital_mini_12jun2013 (in=in2)
      toddw._vital_mini_24mar2014 (in=in3)
      toddw._vital_mini_31dec2014 (in=in4)  /*** MOST CURRENT VITAL DATA SET ***/
  ;
  length STATUS $20;
  format xdod monyy7.;
  if not missing(dod) then do;
     xdod  =mdy(month(dod),1,year(dod));
     STATUS="DOD in "||put(xdod,monyy7.);
  end;
  else do;
     STATUS="Alive";
  end;

  if         in1 then file="_31OCT12";
     else if in2 then file="_12JUN13";
     else if in3 then file="_24MAR14";
     else if in4 then file="_31DEC14";
run;

proc summary data=chk1 nway missing;
   class xdod STATUS file;
   output out=chk2 (drop=_type_ rename=(_freq_=patients));
run;
proc transpose data=chk2
               out =chk2 (drop=_name_);
   by xdod STATUS;
   id file;
   var patients;
run;

data chk3;
   set chk2;
   length STATUS2 $40;
   if missing(xdod) then do;
      STATUS2=STATUS;
      ord=1;
   end;
   else if year(xdod) lt 2000 then do;
      STATUS2="DOD in "||put(xdod,MONYY7.);
      ord=2;
   end;
   else if 2000 le year(xdod) le 2011 then do;
      STATUS2="DOD in CAY "||put(year(xdod),4.);
      ord=3;
      xdod=.;
   end;
   else if "01JAN2012"d le xdod le "30SEP2012"d then do;
      if         "01JAN2012"d le xdod le "31MAR2012"d then STATUS2="DOD in Q1-2012";
         else if "01APR2012"d le xdod le "30JUN2012"d then STATUS2="DOD in Q2-2012";
         else if "01JUL2012"d le xdod le "30SEP2012"d then STATUS2="DOD in Q3-2012";
      ord=4;
      xdod=.;
   end;
   else do;
```

```
      STATUS2="DOD in "||put(xdod,MONYY7.);
      ord=5;
   end;
run;

proc summary data=chk3 nway missing;
   class ord xdod STATUS2;
   var _31OCT12 _12JUN13 _24MAR14 _31DEC14;
   output out=chk4 (drop=_type_ _freq_) sum=;
run;

proc sql noprint;
   select sum(_31DEC14) into :tot from chk4
   ;
quit;

data chk5;
   format STATUS2
          _31OCT12 pct1
          _12JUN13 pct2
          _24MAR14 pct3
          _31DEC14 pct4
   ;
   set chk4;
   if not missing(_31OCT12) then pct1 = _31OCT12/&tot;
   if not missing(_12JUN13) then pct2 = _12JUN13/&tot;
   if not missing(_24MAR14) then pct3 = _24MAR14/&tot;
   if not missing(_31DEC14) then pct4 = _31DEC14/&tot;


   format _31OCT12
          _12JUN13
          _24MAR14
          _31DEC14 comma8.
          pct1
          pct2
          pct3
          pct4 percent10.2
   ;
   label STATUS2  ="Status"
         _31OCT12 ="# Patients 31OCT2012 Vital"
         _12JUN13 ="# Patients 12JUN2013 Vital"
         _24MAR14 ="# Patients 24MAR2014 Vital"
         _31DEC14 ="# Patients 31DEC2014 Vital"
         pct1     ="--pct--"
         pct2     ="--pct--"
         pct3     ="--pct--"
         pct4     ="--pct--"
   ;
   drop xdod;
run;

proc print data=chk5 noobs label;
   title1 "CSP517 -- checking DOD Status -- Vital Mini 31DEC2014 TimeStamp -- Compared w/3
Previous Vitals";
   title2 "SAS Data Set: _vital_mini_31dec2014";
   title3 "Location/path: /export/data/csp517/csp517/datasets";
   by ord;
   id ord;
   sum _31OCT12  pct1
       _12JUN13  pct2
       _24MAR14  pct3
       _31DEC14  pct4
   ;
run; title;

*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********31c_create_yearly_framework.sas**********
*************************************************************************;
```

```
* Name: /export/data/avgcost/csp517/31c_create_yearly_framework.sas       ;
*                                                                        ;
* Description:  create framework for Year2, Year3, Year4, etc.           ;
*               cost/util thru 30SEP2013 ... want only full years        ;
*               THIS SHOULD INCLUDE DATA THRU FY13 (30SEO2013)            ;
*               ... similar to prog 23a                                  ;
*               Included data thru FY14 (30SEP2014)                      ;
*               (modified from prog 29c -HJ)                             ;
*                                                                        ;
* Input: toddw._vital_mini_31dec2014  (latest Vital File)                ;
*        toddw2.analy_cabg_30may2014  (prior analysis data set - to fy14) ;
*                                                                        ;
* Output: toddw3.adamc_deaths_fixed_fy14                                 ;
*         toddw3.adamc_yr_frame_to_fy14                                  ;
*                                                                        ;
* Ext.Macros: No                                                         ;
*                                                                        ;
* Run Under:  SAS 9.2 for Unix                                           ;
*                                                                        ;
* Date      Author    Modification History                               ;
* ----------------------------------------------------------------------;
* 06MAY13   AdamC     dont change 1 case DOD to MISSING DOD              ;
* 10SEP15   Howard Jiang  Modified for FY14                              ;
************************************************************************;

options ps=70 ls=170 nodate nocenter nonumber nosymbolgen nomprint;

libname toddw  "/export/data/csp517/csp517/datasets";
libname toddw2 "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw3 "/export/data/csp517/csp517/datasets/analy_w_fy14"; /*** ADDED FOR FY14 ***/

libname library "/static/data/sasfmt/ptffmt";

%let oldanaly=toddw2.analy_cabg_30may2014;
%let curvital=toddw._vital_mini_31dec2014;

%let outf1  =toddw3.adamc_deaths_fixed_fy14;   /*** OUTPUT ***/
%let outf2  =toddw3.adamc_yr_frame_to_fy14;   /*** OUTPUT ***/

%let enddt="30SEP2014"d;    /*** UTIL STOP DATE ***/
%let inc  =365;             /*** YEAR INCREMENT ***/

************************************************************************;
* 1. prep                                                              ;
************************************************************************;

* get the most current DOD from most current VITAL file;

proc sql;
   create table q1_ as
   select a.*,
          b.DOD as dod_curr_vital
   from &oldanaly (rename=(dod_curr_vital=dod_old_vital dod_adamc=dod_old_adamc)) as a
       left join
        &curvital as b             /*** THIS IS THE MOST CURRENT VITAL ***/
   on a.scrssn eq b.scrssn
   ;
quit;

/*
NOTE: Table WORK.Q1_ created, with 2200 rows and 141 columns.
*/

* fix death date -- use Q1_CHK1 as guide;
data q1
     q1_chk1
     q1_chk2
   ;
   set q1_;
   format dod_AdamC date9.;
```

```
   dod_AdamC=dod_baseline;
   if dod_baseline ne dod_curr_vital then do;
      if not missing(dod_curr_vital) then do;
         if year(dod_curr_vital) > 2000 then do;
            dod_AdamC=dod_curr_vital;
            chk="X";
         end;
      end;
   end;

  * added to fix later  -- 1 case;
   if not missing(dod_AdamC) and (dod_AdamC < randate) then bad="X";

   label dod_AdamC="Date of Death (AdamC Fix)";
   keep scrssn randate randate365 dod_baseline dod_curr_vital dod_AdamC chk bad;

   output q1;
   if (dod_baseline ne dod_curr_vital) then output q1_chk1;
   if bad="X"                          then output q1_chk2;
run;

* fix 1 case bad DOD;
data q1_fix;
   set q1;

  * 1 case -- DO NOT FIX -- 3/5/2013;
  * if bad="X" then dod_AdamC=.;

  * 1 case;
   if dod_baseline="30JUN2007"d and dod_curr_vital="15JUN2007"d then do;
      dod_AdamC=dod_baseline;
      chk_="X";
   end;
run;

* permanent;
data &outf1;
   set q1_fix;
   drop chk chk_ bad;
run;

*************************************************************************;

* summarize the deaths;

data chk_status1;
   set q1_fix;
   length STATUS $20;
   format xdod monyy7.;
   if not missing(dod_AdamC) then do;
      xdod  =mdy(month(dod_AdamC),1,year(dod_AdamC));
      STATUS="DOD in "||put(xdod,monyy7.);
   end;
   else do;
      STATUS="Alive";
   end;
run;

proc summary data=chk_status1 nway missing;
   class xdod STATUS;
   output out=chk_status2 (drop=_type_ rename=(_freq_=patients));
run;

data chk_status3;
   set chk_status2;
   length STATUS2 $40;
   if missing(xdod) then do;
      STATUS2=STATUS;
      ord=1;
   end;
   else if year(xdod) lt 2000 then do;
```

```
      STATUS2="DOD in "||put(xdod,MONYY7.);
      ord=2;
   end;
   else if 2000 le year(xdod) le 2012 then do;
      STATUS2="DOD in CAY "||put(year(xdod),4.);
      ord=3;
      xdod=.;
   end;
   else do;
      STATUS2="DOD in "||put(xdod,MONYY7.);
      ord=4;
   end;
run;

proc summary data=chk_status3 nway missing;
   class ord xdod STATUS2;
   var patients;
   output out=chk_status4 (drop=_type_ _freq_) sum=;
run;

proc sql noprint;
   select sum(patients) into :tot from chk_status4
   ;
quit;

data chk_status5;
   format num;
   set chk_status4;
   pct = patients/&tot;
   format patients comma8.
          pct      percent10.2;
   if         STATUS2="Alive"       then num=1;
      else if STATUS2=:"DOD in CAY" then num=2;
      else                               num=3;
   label STATUS2 ="Status"
         patients="# Patients"
         pct     ="-pct-"
         num     ="#"
   ;
   drop ord xdod;
run;

proc print data=chk_status5 noobs label;
   title1 "CSP517 -- Alive/Death Status -- thru FY14";
   title2 "DOD from Baseline, augmented with Vital Mini (31DEC2014 TimeStamp)";
   by num;
   id num;
   sum  patients pct;
run; title;

*************************************************************************;
* 2. count days to 30SEP2014 or DOD                                     ;
*************************************************************************;

data q2;
   format dod_AdamC dod_curr_vital dod_baseline;
   set q1_fix;
   if missing(dod_AdamC) then do;
      days=intck("days",randate,&enddt);
      periods_=days/&inc;
      periods =int(periods_);
   end;
   else do;
      days=intck("days",randate,min(&enddt, dod_AdamC));
      periods_=days/&inc;

      if mod(periods_,1) > 0 then do;
         periods=int(periods_)+1;   /*** ToddW wants the FULL year if patient died ***/
         chk__=1;
      end;
      else if periods_=0 then do;
```

```
         periods=int(periods_)+1;   /*** ToddW wants the FULL year if patient died ***/
         chk__=2;
      end;
      else do;
         periods=int(periods_);
         chk__=3;
      end;
   end;
run;

*************************************************************************;
* 3. make a yearly structure                                            ;
*************************************************************************;

* CHK_=1, CHK_=2, and CHK_=3 ... looks OK ... proceed;

data q3;
   set q2;
   retain start stop;
   format start stop date9.;
   if periods=0 then do;
      output;
   end;
   else do;
      do i=1 to periods;
         if i=1 then do;
            start=randate;
            stop =intnx("day",randate,&inc-1);
            year =1;
            output;
         end;
         else do;
            start=intnx("day",stop,1);
            stop =intnx("day",start,&inc-1);
            year =i;
            output;
         end;
      end;
   end;
   drop days periods_ periods i chk bad chk_ chk__;;
run;

data &outf2 (compress=yes);
   set q3;
   label start="Start Date"
         stop ="Stop Date"
         year ="Number of 365 Days Time Frame"
   ;
run;

* summarize to check;
proc summary data=&outf2 nway missing;
   class scrssn;
   var year;
   output out=sum (drop=_type_ _freq_) max=;
run;
data sum;
   set sum;
   pct=1/&tot;  /*** QUICK AND DIRTY ***/
run;
proc summary data=sum nway missing;
   class year;
   var pct;
   output out=sum (drop=_type_ rename=(_freq_=patients)) sum=;
run;

options formdlim="*";
proc print data=sum noobs label;
   title1 "CSP517 (AdamC) -- Yearly Framework Summary -- Util data thru FY14";
   sum patients pct;
   format patients comma8.
```

```
          pct percent8.2
   ;
   label patients="# Patients"
         pct     ="-pct-"
   ;
run; title;
options formdlim="";

*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********31d_process_ip_fy14.sas**********
*************************************************************************;
* Name: /export/data/avgcost/csp517/31d_process_ip_fy14.sas              ;
*                                                                        ;
* Description:  process post randomization IP cost/util (incl FY13)      ;
*               (modified from prog 29d -HJ)                             ;
*                                                                        ;
* Input: toddw2.analy_cabg_30may2014   (use to identify INDEX stay)      ;
*        toddw._ptf_main00_10          (from prog 01)                    ;
*        toddw._ptf_main11_new         (from prog 21A)                   ;
*        toddw._ptf_main12_new         (from prog 29AX)                  ;
*        toddw._ptf_main13             (from prog 29a)                   ;
*        toddw._ptf_main14             (from prog 31a) <<<>>>            ;
*        toddw._disch00_10             (from prog 01)                    ;
*        toddw._disch11                (from prog 15)                    ;
*        toddw._disch12                (from prog 21)                    ;
*        toddw._disch13                (from prog 29A)                   ;
*        toddw._disch14                (from prog 31a) <<<>>>            ;
*                                                                        ;
* Output: toddw3.adamc_disch_to_fy14                                     ;
*                                                                        ;
* Ext.Macros: No                                                         ;
*                                                                        ;
* Run Under:  SAS 9.2 for Unix                                           ;
*                                                                        ;
* Date      Author    Modification History                               ;
* ---------------------------------------------------------------------;
* 07MAY14   AdamC                                                        ;
* 13MAY14   AdamC     Re-run using PTF_MAIN_FY12_NEW, ... now has COSTN  ;
*                     and COSTL                                          ;
* 11SEP15   Howard Jiang   Modified for FY14                             ;
*************************************************************************;

options ps=70 ls=160 nodate nocenter nosymbolgen nomprint;

libname toddw   "/export/data/csp517/csp517/datasets";
libname toddw2  "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw3  "/export/data/csp517/csp517/datasets/analy_w_fy14";  /*** ADDED FOR FY14 ***/
libname library "/static/data/sasfmt/ptffmt";

%let ptf_a = toddw._ptf_main00_10;
%let ptf_b = toddw._ptf_main11_new;   /*** HAS AVG COST ***/
%let ptf_c = toddw._ptf_main12_new;   /*** HAS AVG COST ***/
%let ptf_d = toddw._ptf_main13;       /*** NO AVG COST -- OK w/ Todd ***/
%let ptf_e = toddw._ptf_main14;

%let dss_a = toddw._disch00_10;
%let dss_b = toddw._disch11;
%let dss_c = toddw._disch12;
%let dss_d = toddw._disch13;
%let dss_e = toddw._disch14;

%let index = toddw2.analy_cabg_30may2014;  /*** OLD Analysis File        ***/

%let outf = toddw3.adamc_disch_to_fy14;    /*** Permanent Data Set Name  ***/
%let lbl  = Discharges From Index to FY14; /*** Permanent Data Set Label ***/

*************************************************************************;
* 01. get the cohort ... those that have the INDEX stay                 ;
*************************************************************************;
```

```
* START used to select records;

data index;
   format idx_admitday
          idx_disday date9.
   ;
   set &index;
   format start
          end date9.
   ;
   start=idx_admitday;
   end  =idx_disday;
   rename idx_admitday=admitday
          idx_disday  =disday
   ;
   keep scrssn idx_admitday idx_disday randate start end;
run;

*************************************************************************;
* 2. process PTF main                                                   ;
*************************************************************************;

data ptf_main_a;
   set &ptf_a
       &ptf_b
       &ptf_c
       &ptf_d
       &ptf_e
   ;
run;
/*
NOTE: There were 10693 observations read from the data set TODDW._PTF_MAIN00_10.
NOTE: There were 727 observations read from the data set TODDW._PTF_MAIN11_NEW.
NOTE: There were 686 observations read from the data set TODDW._PTF_MAIN12_NEW.
NOTE: There were 662 observations read from the data set TODDW._PTF_MAIN13.
NOTE: There were 642 observations read from the data set TODDW._PTF_MAIN14.
NOTE: The data set WORK.PTF_MAIN_A has 13410 observations and 143 variables.
*/

proc sql;
   create table ptf_main_b as
   select a.*,
          b.start,
          b.end,
          b.randate
   from ptf_main_a as a,
        index as b
   where a.scrssn eq b.scrssn
   ;
quit;
/*
NOTE: Table WORK.PTF_MAIN_B created, with 13410 rows and 146 columns.
*/

data ptf_main_c
     ptf_main_c_xtra;
   set ptf_main_b;
   format dt date9.;
   if not missing(start)        then dt=start;
     else if not missing(end)   then dt=end;
     else                            dt=randate;
   if admitday ge dt then output ptf_main_c;
      else               output ptf_main_c_xtra;
run;
/*
NOTE: There were 13410 observations read from the data set WORK.PTF_MAIN_B.
NOTE: The data set WORK.PTF_MAIN_C has 10442 observations and 147 variables.
NOTE: The data set WORK.PTF_MAIN_C_XTRA has 2968 observations and 147 variables.
*/
```

```
* dont need Average Cost b/c not avialable yet for FY13;
* need Dx info;
data ptf_main_d;
   set ptf_main_c;
   drop costn_: costl_: los_: RACE: COUNTRY INCOME start end randate dt;
run;

* NOTE: PTF_MAIN_D HAS NO DUP=1;
data ptf_main_d;
   set ptf_main_d;
   if dup ne 1;
run;
/*
NOTE: There were 10442 observations read from the data set WORK.PTF_MAIN_C.
NOTE: The data set WORK.PTF_MAIN_D has 10442 observations and 101 variables.
*/

* NOTE: want everthing ... incl NURSING HOME;
data ptf_main_d;
   set ptf_main_d;

*  COMMENT OUT;
*  if flagnh ne 1;
run;
/*
NOTE: There were 10442 observations read from the data set WORK.PTF_MAIN_D.
NOTE: The data set WORK.PTF_MAIN_D has 10442 observations and 101 variables.
*/

* NOTE: want everthing ... incl XM and PMO;
data ptf_main_d;
   set ptf_main_d;
*  COMMENT OUT;
*  if _src_desc_ not in ("XM","PMO");
run;
/*
NOTE: There were 10442 observations read from the data set WORK.PTF_MAIN_D.
NOTE: The data set WORK.PTF_MAIN_D has 10442 observations and 101 variables.
*/

* SEE IF IT IS UNIQUE;
proc sort data=ptf_main_d;
   by scrssn sta3n admitday disday;
run;
data ptf_main_e
     ptf_main_e_chk;
   set ptf_main_d;
   by scrssn sta3n admitday disday;
   output ptf_main_e;
   if not (first.disday and last.disday) then output ptf_main_e_chk;
run;
/*
NOTE: There were 10442 observations read from the data set WORK.PTF_MAIN_D.
NOTE: The data set WORK.PTF_MAIN_E has 10442 observations and 101 variables.
NOTE: The data set WORK.PTF_MAIN_E_CHK has 4 observations and 101 variables.
*/

* DISDAY IS NEEDED -- EXPECT 9800 after adding _SRC_DESC_;
proc summary data=ptf_main_e nway missing;
   class scrssn sta3n admitday disday _src_desc_;
   output out=ptf_main_e_unique (drop=_type_ _freq_);
run;
/*
NOTE: There were 10442 observations read from the data set WORK.PTF_MAIN_E.
NOTE: The data set WORK.PTF_MAIN_E_UNIQUE has 10442 observations and 5 variables.
*/

* fix for merging later;
data ptf_main_f;
   length scrssn sta3n admitday disday 8.;
   format scrssn sta3n admitday disday _src_desc_ _src_fy_
```

```
          drg dxprime dxlsf dxf:
   ;
   set ptf_main_e;
   rename _src_desc_=ptf_desc
          _src_fy_  =ptf_fy
          DXPRIME   =ptf_dxprime
          DXLSF     =ptf_dxlsf
          DRG       =ptf_drg
          DXF2      =ptf_dxf2
          DXF3      =ptf_dxf3
          DXF4      =ptf_dxf4
          DXF5      =ptf_dxf5
          DXF6      =ptf_dxf6
          DXF7      =ptf_dxf7
          DXF8      =ptf_dxf8
          DXF9      =ptf_dxf9
          DXF10     =ptf_dxf10
          DXF11     =ptf_dxf11
          DXF12     =ptf_dxf12
          DXF13     =ptf_dxf13
          ABO       =ptf_abo
          PASS      =ptf_pass
          ASIH      =ptf_asih
          LS        =ptf_ls
   ;
   drop fydis pseud admityr admitmo source stafrom pow
        ms sex bornyear bornday age psx aor rad homstate homecnty means
        afix disyr dismo opt vaaus tosta6a cp shadind disshadind
        sci adtime distime plcdr bos sta6a scper agocare envcare irdcare
        ethnic erind combat: home: psrcd ag8r ag15y statyp ag9r encshadind
  ;
run;
/*
NOTE: There were 10442 observations read from the data set WORK.PTF_MAIN_E.
NOTE: The data set WORK.PTF_MAIN_F has 10442 observations and 51 variables.
*/

*************************************************************************;
* 3. process DSS                                                        ;
*************************************************************************;

* DISCH13 -- source is CDW in VINCI -- there are problems, so fix here;
data _disch13_fixed;
   set &dss_d (rename=(ADMITDAY =admitday_old
                       DISDAY   =disday_old
                       oefoifdte=oefoifdte_old
                       EXTDTE   =EXTDTE_old
                       mpi      =mpi_old
                      )
              );
   ADMITDAY =mdy(input(substr(admitday_old,6,2),2.),
                 input(substr(admitday_old,9,2),2.),
                 input(substr(admitday_old,1,4),4.)
                );
   DISDAY   =mdy(input(substr(disday_old,6,2),2.),
                 input(substr(disday_old,9,2),2.),
                 input(substr(disday_old,1,4),4.)
                );
   if not missing(oefoifdte_old) then oefoifdte=mdy(input(substr(oefoifdte_old,6,2),2.),
                                                    input(substr(oefoifdte_old,9,2),2.),
                                                    input(substr(oefoifdte_old,1,4),4.)
                                                   );
   EXTDTE=.;                       /*** CHAR of length 1 in FY13 ***/

   mpi=input(mpi_old, best12.);   /*** BEST12 format in FY11 ***/

   drop  admitday_old disday_old oefoifdte_old EXTDTE_old mpi_old;
run;
/*
NOTE: There were 544 observations read from the data set TODDW._DISCH13.
NOTE: The data set WORK._DISCH13_FIXED has 544 observations and 93 variables.
```

```
*/

* DISCH14 - Fixed the variable mpi -HJ 9/14/2015;
data _disch14_fixed;
   set &dss_e (rename=(mpi=mpi_old));
   mpi=input(mpi_old, best12.);   /*** BEST12 format in FY11 ***/
   drop mpi_old;
run;

/*
NOTE: There were 502 observations read from the data set TODDW._DISCH14.
NOTE: The data set WORK._DISCH14_FIXED has 502 observations and 93 variables.
*/

data dss_disch_a;
   set &dss_a
       &dss_b
       &dss_c
       _disch13_fixed
       _disch14_fixed;
   ;
   rename _src_desc_=dss_desc
          _src_fy_  =dss_fy
          drg       =dss_drg
          prindx    =dss_prindx
          admitdx   =dss_admitdx
          dxprime   =dss_dx_prime
          dxlsf     =dss_dxlsf
          admitdrg  =dss_admitdrg
          aggabs    =dss_aggabs
          days      =dss_days
   ;
   drop suffix fy fp pcp pcptype a_pcp a_pcptyp age sex pcptype--ps;
run;
/*
NOTE: There were 9591 observations read from the data set TODDW._DISCH00_10.
NOTE: There were 632 observations read from the data set TODDW._DISCH11.
NOTE: There were 574 observations read from the data set TODDW._DISCH12.
NOTE: There were 544 observations read from the data set WORK._DISCH13_FIXED.
NOTE: There were 502 observations read from the data set WORK._DISCH14_FIXED.
NOTE: The data set WORK.DSS_DISCH_A has 11843 observations and 84 variables.
*/

proc sql;
   create table dss_disch_b as
   select a.*,
          b.start,
          b.end,
          b.randate
   from dss_disch_a as a,
        index as b
   where a.scrssn eq b.scrssn
   ;
quit;
/*
NOTE: Table WORK.DSS_DISCH_B created, with 11843 rows and 87 columns.
*/

data dss_disch_c
     dss_disch_c_xtra;
   format scrssn sta3n admitday disday;
   format admitday disday date9.;
   set dss_disch_b;
   format dt date9.;
   if not missing(start)      then dt=start;
     else if not missing(end) then dt=end;
     else                          dt=randate;
   if admitday ge dt then output dss_disch_c;
      else                output dss_disch_c_xtra;
run;
/*
```

```
NOTE: There were 11843 observations read from the data set WORK.DSS_DISCH_B.
NOTE: The data set WORK.DSS_DISCH_C has 9337 observations and 88 variables.
NOTE: The data set WORK.DSS_DISCH_C_XTRA has 2506 observations and 88 variables.
*/

* keep only the variables of interest;
data dss_disch_d;
   set dss_disch_c;
   keep scrssn sta3n admitday disday dss_desc dss_fy dss:
        DNUR_TOT DSUR_TOT DRAD_TOT DPHA_TOT DAO_TOT DCST_TOT
   ;
run;
/*
NOTE: There were 9337 observations read from the data set WORK.DSS_DISCH_C.
NOTE: The data set WORK.DSS_DISCH_D has 9337 observations and 20 variables.
*/

proc sort data=dss_disch_d;
   by scrssn sta3n admitday disday;
run;

data dss_disch_e;
   format scrssn sta3n admitday disday dss_drg dss_admitdrg
          dss_prindx dss_admitdx dss_dx_prime dss_dxlsf
   ;
   set dss_disch_d;
   dss_admitnum=_n_;

   keep scrssn sta3n admitday disday dss_desc dss_fy dss:
        DNUR_TOT DSUR_TOT DRAD_TOT DPHA_TOT DAO_TOT DCST_TOT dss_admitnum
   ;
run;
/*
NOTE: There were 9337 observations read from the data set WORK.DSS_DISCH_D.
NOTE: The data set WORK.DSS_DISCH_E has 9337 observations and 21 variables.
*/

*************************************************************************;
* 4. combine DSS and PTF                                                 ;
*************************************************************************;

data c1
     c1_ok
     c1_extra
   ;
   merge dss_disch_e  (in=in1)
         ptf_main_f   (in=in2)
   ;
   by scrssn sta3n admitday disday;
   if in1 or in2  then output c1;
   if in1 and in2 then output c1_ok;
      else if in2 then output c1_extra;
run;
/*
NOTE: There were 9337 observations read from the data set WORK.DSS_DISCH_E.
NOTE: There were 10442 observations read from the data set WORK.PTF_MAIN_F.
NOTE: The data set WORK.C1 has 10442 observations and 68 variables.
NOTE: The data set WORK.C1_OK has 9339 observations and 68 variables.
NOTE: The data set WORK.C1_EXTRA has 1103 observations and 68 variables.
*/

/* looking at C1_OK ... DSS_ADMITNUM is thru 8,835 while OBS=8,837
   expect this to be due to XM, PMO ... YES!!!!

proc sort data=c1_ok
          out =c1_ok_chk;
   by dss_admitnum;
run;
data c1_ok_chk;
   set c1_ok_chk;
   by dss_admitnum;
```

```
   if not (first.dss_admitnum and last.dss_admitnum);
run;
*/

* CANNOT USE C1 .. 2 RECS WRONG ... MERGE IN STEPS;

data c2
     dss_r2
     ptf_r2
   ;
   merge dss_disch_e  (in=in1                      )
         ptf_main_f   (in=in2 where=(ptf_desc="PM"))
   ;
   by scrssn sta3n admitday disday;
   if in1 and in2 then output c2;
      else if in1 then output dss_r2;
      else if in2 then output ptf_r2;
run;

/*
NOTE: There were 9337 observations read from the data set WORK.DSS_DISCH_E.
NOTE: There were 8907 observations read from the data set WORK.PTF_MAIN_F.
      WHERE ptf_desc='PM';
NOTE: The data set WORK.C2 has 8883 observations and 68 variables.
NOTE: The data set WORK.DSS_R2 has 454 observations and 68 variables.
NOTE: The data set WORK.PTF_R2 has 24 observations and 68 variables.
*/

data c3
     dss_r3
     ptf_r3
   ;
   merge dss_r2     (in=in1 drop=ptf_desc--ptf_asih)
         ptf_main_f (in=in2 where=(ptf_desc="XM"))
   ;
   by scrssn sta3n admitday disday;
   if in1 and in2 then output c3;
      else if in1 then output dss_r3;
      else if in2 then output ptf_r3;
run;
/*
NOTE: There were 454 observations read from the data set WORK.DSS_R2.
NOTE: There were 577 observations read from the data set WORK.PTF_MAIN_F.
      WHERE ptf_desc='XM';
NOTE: The data set WORK.C3 has 454 observations and 68 variables.
NOTE: The data set WORK.DSS_R3 has 0 observations and 68 variables.
NOTE: The data set WORK.PTF_R3 has 123 observations and 68 variables.
*/

* since DSS_R3=0, put the data back -- should get back same number of OBS in C1 -- 9,800;
data c4;
   set c2
       c3
       ptf_r2
       ptf_r3
       ptf_main_f (in=in2 where=(ptf_desc="PMO"))
   ;
run;
/*
NOTE: There were 8883 observations read from the data set WORK.C2.
NOTE: There were 454 observations read from the data set WORK.C3.
NOTE: There were 24 observations read from the data set WORK.PTF_R2.
NOTE: There were 123 observations read from the data set WORK.PTF_R3.
NOTE: There were 958 observations read from the data set WORK.PTF_MAIN_F.
      WHERE ptf_desc='PMO';
NOTE: The data set WORK.C4 has 10442 observations and 68 variables.
*/

proc sort data=c4
          out =c5;
   by scrssn sta3n admitday disday ptf_desc;
```

```
run;

data c6;
   format adamc_src adamc_src_fy;
   set c5;
   length adamc_src $20;
   if         dss_desc="DISCH" and ptf_desc="PM"  then adamc_src="DISCH and PM";
      else if dss_desc="DISCH" and ptf_desc="PMO" then adamc_src="DISCH and PMO";
      else if dss_desc="DISCH" and ptf_desc="XM"  then adamc_src="DISCH and XM";
      else if dss_desc="DISCH" and ptf_desc=""    then adamc_src="DISCH Only";
      else if dss_desc=""      and ptf_desc="PM"  then adamc_src="PM Only";
      else if dss_desc=""      and ptf_desc="PMO" then adamc_src="PMO Only";
      else if dss_desc=""      and ptf_desc="XM"  then adamc_src="XM Only";
   if         dss_fy = ptf_fy then adamc_src_fy=dss_fy;
      else if dss_fy = .      then adamc_src_fy=ptf_fy;
      else if ptf_fy = .      then adamc_src_fy=dss_fy;

   drop dss_desc dss_fy ptf_desc ptf_fy dod flag b4fy98;
run;

/* chek the mapping

proc summary data=c6 nway missing;
   class adamc_src;
   output out=c6_chk1 (drop=_type_ rename=(_freq_=recs));
run;
proc print; sum recs; run;

Obs    adamc_src        recs

 1     DISCH and PM     8883
 2     DISCH and XM      454
 3     PM Only            24
 4     PMO Only          958
 5     XM Only           123
                        =====
                        10442

proc summary data=c6 nway missing;
   class adamc_src_fy;
   output out=c6_chk2 (drop=_type_ rename=(_freq_=recs));
run;
proc print; sum recs; run;


       adamc_
Obs    src_fy     recs

  1     2002       339
  2     2003       825
  3     2004      1004
  4     2005      1136
  5     2006      1171
  6     2007      1108
  7     2008       750
  8     2009       674
  9     2010       718
 10     2011       727
 11     2012       686
 12     2013       662
 13     2014       642
                 =====
                 10442

Note - verified that NO cases where YEAR(RANDATE) < 2002 in data set INDEX;
*/

proc sort data=c6;
   by scrssn admitday disday;
run;
```

```
* find which stay is the INDEX stay;
data c7;
   format ind_idx_stay
          adamc_src
          adamc_src_fy
          scrssn
          admitday
          disday
          sta3n
   ;
   merge c6    (in=ina)
         index (in=inb drop=randate start)
   ;
   by scrssn admitday disday;
   if ina;
   ind_idx_stay=0;
   if inb then ind_idx_stay=1;
   label ind_idx_stay="Ind Index Stay"
         adamc_src   ="Source"
         adamc_src_fy="Source FY"
   ;
run;

/* check -- expect 2200-6=2194 obs

proc summary data=c7 nway missing;
   where ind_idx_stay=1;
   class adamc_src;
   var ind_idx_stay;
   output out=c7_chk (drop=_type_ _freq_) sum=;
run;
proc print noobs;
   sum _numeric_;
run;

                ind_idx_
adamc_src         stay

DISCH and PM      2193
PM Only              1
                ========
                  2194
*/

*************************************************************************;
* 5. fix LOS and combine DSS and PTF                                     ;
*************************************************************************;

* some early fixes first;
data c7_fix1;
   set c7;

  * get rid of period in Dx code ;
   dss_prindx =compress(dss_prindx, ".");
   dss_admitdx=compress(dss_admitdx,".");

   drop dss_admitnum VISN NSURG NBS DBEDSECT DISTYPE LSR
        PLDISCH NPROC UPDATDAY NPROC NXFER ZIP SRTKEY DISTO NDXM
   ;
run;

data c7_fix1_chk;
   set c7_fix1;
   if dss_days ne ptf_ls;
run;

* no case when IMPUT=2;
data c7_fix2;
   set  c7_fix1;
   if adamc_src in ("DISCH and PM","DISCH and XM") then do;
      if missing(dss_days) and ptf_ls > 0 then do;
```

```
         dss_days = ptf_ls;
         impute=1;
      end;
      else if missing(ptf_ls) and dss_days > 0 then do;
         ptf_ls = dss_days;
         impute = 2;
      end;
   end;
run;

data c7_fix2_chk;
   set c7_fix2;
   if dss_days ne ptf_ls;
   if adamc_src ne "PM Only";
   if adamc_src ne "PMO Only";
   if adamc_src ne "XM Only";
run;

* Note DCST_TOT and DSS_DAYS look OK;

*************************************************************************;
* 6. reorder the variables and drop some variables                       ;
*************************************************************************;

/*
proc contents data=c7_fix2 varnum;
run;
*/

%let xord=ind_idx_stay
          adamc_src
          adamc_src_fy
          scrssn
          admitday
          disday
          sta3n
          dss_drg
          dss_admitdrg
          dss_prindx
          dss_admitdx
          dss_dx_prime
          dss_dxlsf
          dss_aggabs
          dss_days
          DNUR_TOT
          DSUR_TOT
          DRAD_TOT
          DPHA_TOT
          DAO_TOT
          DCST_TOT
          ptf_drg
          ptf_dxprime
          ptf_dxlsf
          ptf_dxf2
          ptf_dxf3
          ptf_dxf4
          ptf_dxf5
          ptf_dxf6
          ptf_dxf7
          ptf_dxf8
          ptf_dxf9
          ptf_dxf10
          ptf_dxf11
          ptf_dxf12
          ptf_dxf13
          ptf_abo
          ptf_pass
          ptf_asih
          ptf_ls
          costl
          costn
```

```
   ;
data c8;
   format &xord;
   set c7_fix2;
   format ptf_drg;  /*** remove the format ***/
   drop mdc outside flagnh flagext dup dxlsf32 dxlsf120 impute;
run;


*************************************************************************;
* 7. permanent file                                                     ;
*************************************************************************;

data &outf (label="&lbl" compress=yes);
   set c8;
run;

proc means data=&outf n nmiss sum min median mean max;
   title1 "CSP517 -- PROC MEANS Discharge Data Set -- Index Thru FY14";
   title2 "DSS and PTF -- Cost are NOT inflation adjusted";
run; title;

proc contents data=&outf varnum;
   title1 "CSP517 -- PROC CONTENTS Discharge Data Set -- Index Thru FY14";
   title2 "DSS and PTF -- Cost are NOT inflation adjusted";
run; title;

*************************************************************************;

proc summary data=&outf nway missing;
   class adamc_src ind_idx_stay;
   output out=x (drop=_type_ rename=(_freq_=recs));
run;
proc transpose data=x
               out =x_  (drop=_name_)
               prefix=idx_
   ;
   by adamc_src;
   id ind_idx_stay;
   var recs;
run;
data x_;
   format adamc_src  idx_1 idx_0 total;
   set x_;
   format _numeric_ comma8.;
   total=sum(of idx_:);
   label idx_1="# Index Hospital Stays"
         idx_0="# Post Index Hospital Stays"
   ;
run;

proc print data=x_ noobs label double;
   title1 "CSP517 -- Summary of Discharge Data Set -- Index Thru FY14";
   sum _numeric_;
run; title;

*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********31e_process_ip_ppps_fy14.sas**********
*************************************************************************;
* Name: /export/data/avgcost/csp517/31e_process_ip_ppps_fy14.sas         ;
*                                                                       ;
* Description: process PP and PS ...                                    ;
*              post randomizatio IP cost/util (incl FY14)               ;
*                                                                       ;
* Input: toddw4.adamc_disch_to_fy14    (created in prog 31D)            ;
*                                                                       ;
*        toddw._ptf_xp_ppo_00_10                                        ;
*        toddw._ptf_xs_00_10                                            ;
*        toddw._ptf_xp_ppo_11                                           ;
```

```
*        toddw._ptf_xs_11                                                    ;
*        toddw._ptf_xp_ppo_12                                                ;
*        toddw._ptf_xs_12                                                    ;
*        toddw._ptf_xp_ppo_13                                                ;
*        toddw._ptf_xs_13                                                    ;
*        toddw._ptf_xp_ppo_14    <<<>>>                                      ;
*        toddw._ptf_xs_14        <<<>>>                                      ;
*                                                                            ;
*        toddw._ptf_pp00_10                                                  ;
*        toddw._ptf_pp11                                                     ;
*        toddw._ptf_pp12                                                     ;
*        toddw._ptf_pp13                                                     ;
*        toddw._ptf_pp14         <<<>>>                                      ;
*        toddw._ptf_ps00_10                                                  ;
*        toddw._ptf_ps11                                                     ;
*        toddw._ptf_ps12                                                     ;
*        toddw._ptf_ps13                                                     ;
*        toddw._ptf_ps14         <<<>>>                                      ;
*                                                                            ;
* Output:  toddw4.adamc_disch_pp_ps_to_fy14                                  ;
*                                                                            ;
* Ext.Macros: No                                                             ;
*                                                                            ;
* Run Under:  SAS 9.2 for Unix                                               ;
*                                                                            ;
* Date      Author    Modification History                                   ;
* ---------------------------------------------------------------------------;
* 12MAY13   AdamC                                                            ;
* 14DEC15   Howard Jiang  Modified prog 29e                                  ;
*****************************************************************************;

options ps=70 ls=160 nodate nocenter nosymbolgen nomprint;

libname toddw   "/export/data/csp517/csp517/datasets";
*libname toddw2  "/export/data/csp517/csp517/datasets/analy_w_fy12";
*libname toddw3  "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw4  "/export/data/csp517/csp517/datasets/analy_w_fy14";  /*** ADDED FOR FY14 ***/
libname library "/static/data/sasfmt/ptffmt";

%let stays14 = toddw4.adamc_disch_to_fy14;  /*** from prog 31d ***/

%let p_00_10 = toddw._ptf_xp_ppo_00_10;
%let p_11    = toddw._ptf_xp_ppo_11;
%let p_12    = toddw._ptf_xp_ppo_12;
%let p_13    = toddw._ptf_xp_ppo_13;
%let p_14    = toddw._ptf_xp_ppo_14;

%let s_00_10 = toddw._ptf_xs_00_10;
%let s_11    = toddw._ptf_xs_11;
%let s_12    = toddw._ptf_xs_12;
%let s_13    = toddw._ptf_xs_13;
%let s_14    = toddw._ptf_xs_14;

%let pp_00_10 = toddw._ptf_pp00_10;
%let pp_11    = toddw._ptf_pp11;
%let pp_12    = toddw._ptf_pp12;
%let pp_13    = toddw._ptf_pp13;
%let pp_14    = toddw._ptf_pp14;

%let ps_00_10 = toddw._ptf_ps00_10;
%let ps_11    = toddw._ptf_ps11;
%let ps_12    = toddw._ptf_ps12;
%let ps_13    = toddw._ptf_ps13;
%let ps_14    = toddw._ptf_ps14;

%let outf = toddw4.adamc_disch_pp_ps_to_fy14;   /*** Permanent Data Set Name  ***/
%let lbl  = PROC SURG Codes From Index to FY14; /*** Permanent Data Set Label ***/

*****************************************************************************;
* 01. the stays ... data set created in prior program 23B                   ;
*****************************************************************************;
```

```
data stays_fy14a;
   set &stays14;
   length xsrc $8;
   if        adamc_src="DISCH and PM" then xsrc="MAIN";
     else if adamc_src="DISCH and XM" then xsrc="EXT";
     else if adamc_src="PM Only"      then xsrc="MAIN";
     else if adamc_src="PMO Only"     then xsrc="OBSERV";
     else if adamc_src="XM Only"      then xsrc="EXT";
   keep ind_idx_stay--sta3n xsrc;
run;

proc sort data=stays_fy14a
          out =stays_fy14b;
   by scrssn admitday disday xsrc;
run;

*************************************************************************;
* 02. procedure codes                                                   ;
*************************************************************************;

data p;
   format scrssn admitday disday xsrc bedsecn procde:;
   set &pp_00_10 (in=inpp10)
       &pp_11    (in=inpp11)
       &pp_12    (in=inpp12)
       &pp_13    (in=inpp13)
       &pp_14    (in=inpp14)

       &p_00_10  (in=inp10)
       &p_11     (in=inp11)
       &p_12     (in=inp12)
       &p_13     (in=inp13)
       &p_14     (in=inp14)
   ;
   length xsrc $8;
   if inpp10 or inpp11 or inpp12 or inpp13 or inpp14 then do;
      xsrc="MAIN";
   end;
   else if inp10 or inp11 or inp12 or inp13 or inp14 then do;
      if         _src_desc_="XP"  then xsrc="EXT";
         else if _src_desc_="PPO" then xsrc="OBSERV";
   end;
   keep _src_desc_ _src_fy_ scrssn admitday disday procde: xsrc bedsecn ;
run;

proc sort data=p;
   by scrssn admitday disday xsrc;
run;

*************************************************************************;
* 03. surgical codes                                                    ;
*************************************************************************;

data s;
   format scrssn admitday disday xsrc surgspec surg9cd:;
   set &ps_00_10 (in=inps10)
       &ps_11    (in=inps11)
       &ps_12    (in=inps12)
       &ps_13    (in=inps13)
       &ps_14    (in=inps14)

       &s_00_10  (in=ins10)
       &s_11     (in=ins11)
       &s_12     (in=ins12)
       &s_13     (in=ins13)
       &s_14     (in=ins14)
   ;
   length xsrc $8;
   if inps10 or inps11 or inps12 or inps13 or inps14 then do;
      xsrc="MAIN";
```

```
   end;
   else if ins10 or ins11 or ins12 or ins13 or ins14 then do;
      if _src_desc_="XS"  then xsrc="EXT";
   end;
   keep _src_desc_ _src_fy_ scrssn admitday disday surg9cd: xsrc surgspec ;
run;

proc sort data=s;
   by scrssn admitday disday xsrc;
run;

*************************************************************************;
* 04. combine procedure and surgical codes                              ;
*************************************************************************;

%let rnp= %str(procde1=procsurg1
               procde2=procsurg2
               procde3=procsurg3
               procde4=procsurg4
               procde5=procsurg5
              );
%let rns= %str(surg9cd1=procsurg1
               surg9cd2=procsurg2
               surg9cd3=procsurg3
               surg9cd4=procsurg4
               surg9cd5=procsurg5
              );
data c1;
   format scrssn admitday disday xsrc bedsec_surgsp;
   set p (rename=(&rnp) in=in1)
       s (rename=(&rns) in=in2)
   ;
   format bedsec_surgsp  bedsecn29.;
   if         in1 then ord=2;
      else if in2 then ord=1;
   if         in1 then bedsec_surgsp=bedsecn;
      else if in2 then bedsec_surgsp=surgspec;
   label bedsec_surgsp="Bed Section, Surgical Specialty"
         procsurg1    ="Procedure /Surgical Code 1"
         procsurg2    ="Procedure /Surgical Code 2"
         procsurg3    ="Procedure /Surgical Code 3"
         procsurg4    ="Procedure /Surgical Code 4"
         procsurg5    ="Procedure /Surgical Code 5"
   ;
   drop bedsecn surgspec;
run;

* Surgical code has higher ranking;
proc sort data=c1
          out =c2;
   by scrssn admitday disday xsrc ord;
run;

data c3;
   set c2;
   length ps $5;
   rec=_n_;
   array ppps (5) procsurg1-procsurg5;
   do i=1 to 5;
      if not missing(ppps(i)) then do;
         ps=ppps(i);
         output;
      end;
   end;
run;

* NO REPEAT OF SAME PROCEDURE or SURGICAL codes;
data c4;
   set c3;
   by scrssn admitday disday xsrc ord;
   retain ps_list
```

```
         ps_flag
         ps_count
   ;
   length ps_list $200;        /*** ADJ THIS AS NECESSARY ***/
   if first.xsrc then do;
      ps_list =trim(ps);
      ps_flag =0;
      ps_count=1;
   end;
   else do;
      do i=1 to ps_count;
         if ps eq scan(ps_list,i,"~") then ps_flag=1;
      end;
      if ps_flag eq 0 then ps_list=trim(ps_list)||"~"||trim(ps);
      ps_flag=0;
      ps_count+1;
   end;
   drop i ps_flag;
run;

data c5;
   set c4;
   by scrssn admitday disday xsrc ord;
   num_elements=count(ps_list,"~")+1;
   if last.xsrc;
   keep scrssn admitday disday xsrc num_elements ps_list;
run;

data c6;
   set c5;
   length ps $5;
   do i=1 to num_elements;
      ps=scan(ps_list,i,"~");
      output;
   end;
run;

proc transpose data=c6
               out =c7 (drop=_name_)
               prefix=proc_surg_cd_
   ;
   by scrssn admitday disday xsrc;
   var ps;
run;

data c8;
   set c7;
   label proc_surg_cd_1 ="Procedure Surgical Code 1"
         proc_surg_cd_2 ="Procedure Surgical Code 2"
         proc_surg_cd_3 ="Procedure Surgical Code 3"
         proc_surg_cd_4 ="Procedure Surgical Code 4"
         proc_surg_cd_5 ="Procedure Surgical Code 5"
         proc_surg_cd_6 ="Procedure Surgical Code 6"
         proc_surg_cd_7 ="Procedure Surgical Code 7"
         proc_surg_cd_8 ="Procedure Surgical Code 8"
         proc_surg_cd_9 ="Procedure Surgical Code 9"
         proc_surg_cd_10="Procedure Surgical Code 10"
         proc_surg_cd_11="Procedure Surgical Code 11"
         proc_surg_cd_12="Procedure Surgical Code 12"
         proc_surg_cd_13="Procedure Surgical Code 13"
         proc_surg_cd_14="Procedure Surgical Code 14"
         proc_surg_cd_15="Procedure Surgical Code 15"
         proc_surg_cd_16="Procedure Surgical Code 16"
         proc_surg_cd_17="Procedure Surgical Code 17"
         proc_surg_cd_18="Procedure Surgical Code 18"
         proc_surg_cd_19="Procedure Surgical Code 19"
         proc_surg_cd_20="Procedure Surgical Code 20"
         proc_surg_cd_21="Procedure Surgical Code 21"
         proc_surg_cd_22="Procedure Surgical Code 22"
         proc_surg_cd_23="Procedure Surgical Code 23"
         proc_surg_cd_24="Procedure Surgical Code 24"
```

```
         proc_surg_cd_25="Procedure Surgical Code 25"
         proc_surg_cd_26="Procedure Surgical Code 26"
         proc_surg_cd_27="Procedure Surgical Code 27"
         proc_surg_cd_28="Procedure Surgical Code 28"
         proc_surg_cd_29="Procedure Surgical Code 29"
         proc_surg_cd_30="Procedure Surgical Code 30"
         proc_surg_cd_31="Procedure Surgical Code 31"
         proc_surg_cd_32="Procedure Surgical Code 32"
   ;
run;

*************************************************************************;
* 05. merge                                                             ;
*************************************************************************;

data stays_fy14c
     chk1
   ;
   merge stays_fy14b (in=ina)
         c8          (in=inb)
   ;
   by scrssn admitday disday xsrc;
   if ina then             output stays_fy14c;
   if inb and not ina then output chk1;
run;
/*
NOTE: There were 10442 observations read from the data set WORK.STAYS_FY14B.
NOTE: There were 9593 observations read from the data set WORK.C8.
NOTE: The data set WORK.STAYS_FY14C has 10442 observations and 40 variables.
NOTE: The data set WORK.CHK1 has 1949 observations and 40 variables.
*/

* Note: 1949 are prior to index (randomization);


*************************************************************************;
* 06. output                                                            ;
*************************************************************************;

data &outf (label="&lbl");
   set stays_fy14c;
   drop xsrc;
run;

/*
proc contents data=&outf varnum;
    title1 "CSP517 -- PROC CONTENTS -- IP ICD9 Procedure/Surgical Data Set -- Index Thru FY14";
    title2 "Procedures/Surgical Codes Are NON-REPEATING (i.e UNIQUE)";
    title3 "Surgical Codes have higher ranking than Procedure Codes";
run;
*/

* check missing;
*%include "/export/home/achow/code/chk_missing.sas";
%include "./chk_missing.sas";

%chk_missing(indsn  = &outf /* Input SAS dataset name  */,
             outdsn = a     /* Output SAS dataset name */
            );

proc print data=a noobs label;
    title1 "CSP517 -- Check Missing Values -- IP ICD9 Procedure/Surgical Data Set -- Index Thru
FY14";
    title2 "Procedures/Surgical Codes Are NON-REPEATING (i.e UNIQUE)";
    title3 "Surgical Codes have higher ranking than Procedure Codes";
    format NOBS comma8.
           miss_pct percent8.1
    ;
run; title;

*************************************************************************;
```

```
data b;
   set &outf;
   if missing(proc_surg_cd_1) then m_ps=1;
run;
proc summary data=b missing;
   class adamc_src;
   var m_ps;
   output out=b (rename=(_freq_=recs)) sum=;
run;
data b;
   set b;
   if _TYPE_=0 then adamc_src="*** TOTAL ***";
   format pct percent8.1
          recs
          m_ps comma8.
   ;
   pct=m_ps/recs;
   label recs="# Stays Index to FY12"
         m_ps="# Missing Procedure Surgical Code1"
         pct ="--pct--"
   ;
run;
proc sort data=b;
   by descending _TYPE_;
run;

options formdlim="*";
proc print data=b (drop=_TYPE_) noobs label double;
    title1 "CSP517 -- Missing Values in ICD9 Procedure Surgical Code 1";
run; title;
options formdlim="";

*************************************************************************;

proc contents data=&outf varnum;
    title1 "CSP517 -- PROC CONTENTS -- IP ICD9 Procedure/Surgical Data Set -- Index Thru FY14";
    title2 "Procedures/Surgical Codes Are NON-REPEATING (i.e UNIQUE)";
    title3 "Surgical Codes have higher ranking than Procedure Codes";
run; title;

*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********31f_process_op_fy14.sas**********
*************************************************************************;
* Name: /export/data/csp517/csp517/31f_process_op_fy14.sas               ;
*                                                                        ;
* Description: process Outpatient ...                                   ;
*              post randomizatio IP cost/util (incl FY14)                ;
*                                                                        ;
* Input: toddw2.analy_cabg_30may2014  (use to identify INDEX stay)       ;
*                                                                        ;
*        toddw._opat00_10_w_low_cost                                     ;
*        toddw._opat11_w_low_cost                                        ;
*        toddw._opat12_w_low_cost                                        ;
*        toddw._opat13_w_low_cost                                        ;
*        toddw._opat14_w_low_cost   <<<>>>                               ;
*                                                                        ;
*        toddw._se00_10                                                  ;
*        toddw._se11_new                                                 ;
*        toddw._se12_new                                                 ;
*        toddw._se13                                                     ;
*        toddw._se14                <<<>>>                               ;
*                                                                        ;
* Output: toddw3.adamc_op_visits_to_fy14                                 ;
*                                                                        ;
* Ext.Macros: No                                                         ;
*                                                                        ;
* Run Under:  SAS 9.2 for Unix                                           ;
*                                                                        ;
```

```
* Date      Author    Modification History                                ;
* ----------------------------------------------------------------------;
* 13MAY14   AdamC     Note: using _SE12_NEW ... now has COTSN and COSTL   ;
;
* 15SEP15   Howard Jiang   Modified prog 29f                              ;
************************************************************************;

options ps=70 ls=160 nodate nocenter nosymbolgen nomprint;

libname toddw   "/export/data/csp517/csp517/datasets";
libname toddw2  "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw3  "/export/data/csp517/csp517/datasets/analy_w_fy14";
libname library "/static/data/sasfmt/ptffmt";

%let index = toddw2.analy_cabg_30may2014;  /*** OLD Analysis File ***/

%let dss_00_10 = toddw._opat00_10_w_low_cost;
%let dss_11    = toddw._opat11_w_low_cost;
%let dss_12    = toddw._opat12_w_low_cost;
%let dss_13    = toddw._opat13_w_low_cost;
%let dss_14    = toddw._opat14_w_low_cost;

%let se_00_10  = toddw._se00_10;
%let se_11     = toddw._se11_new;
%let se_12     = toddw._se12_new;
%let se_13     = toddw._se13;
%let se_14     = toddw._se14;

%let outf = toddw3.adamc_op_visits_to_fy14;        /*** Permanent Data Set Name  ***/
%let lbl  = Outpatient Visits From Index to FY14;  /*** Permanent Data Set Label ***/

************************************************************************;
* 01.  ... use admitday or disday or randate to filter                  ;
************************************************************************;

data index;
   format idx_admitday
          idx_disday date9.
   ;
   set &index;
   format start
          end date9.
   ;
   start=idx_admitday;
   end  =idx_disday;
   rename idx_admitday=admitday
          idx_disday  =disday
   ;
   keep scrssn idx_admitday idx_disday randate start end;
run;

************************************************************************;
* 02. DSS outpatient                                                    ;
************************************************************************;

%let kp_op1 = _src_desc_ _src_fy_ scrssn vizday clstop primdx PRIMCPT4 ocst_tot;

data dss_a;
   set &dss_00_10 (keep=&kp_op1)
       &dss_11    (keep=&kp_op1)
       &dss_12    (keep=&kp_op1)
       &dss_13    (keep=&kp_op1)
       &dss_14    (keep=&kp_op1)

   ;
run;

* check PRIMCPT4 because of length 16 -- USE FIRST 5 BYTES;
proc summary data=dss_a nway missing;
   class PRIMCPT4;
   output out=dss_a_chk1 (drop=_type_);
```

```
run;

* note: clstop all filled;
data dss_b;
   set dss_a;
   length dss_cpt
          dss_dx $5
   ;
   format vizday_ date9.;
   dss_cpt=substr(PRIMCPT4,1,5);
   vizday_=vizday;
   if length(primdx) ge 3 then dss_dx=compress(primdx,".");
run;

* PART1 -- the cost;
proc summary data=dss_b nway missing;
   class scrssn vizday_ clstop;
   var ocst_tot;
   output out=dss_c_part1 (drop=_type_ rename=(_freq_=recs)) sum=;
run;

* PART2 -- the ICD9s;
proc summary data=dss_b nway missing;
   where length(dss_dx) ge 3;
   class scrssn vizday_ clstop dss_dx;
   output out=dss_c_part2 (drop=_type_ rename=(_freq_=recs));
run;
proc transpose data=dss_c_part2
               out =dss_c_part2 (drop=_name_)
               prefix=dss_dx_;
   by scrssn vizday_ clstop;
   var dss_dx;
run;

* PART3 -- the CPTs;
proc summary data=dss_b nway missing;
   where length(dss_cpt) ge 5;
   class scrssn vizday_ clstop dss_cpt;
   output out=dss_c_part3 (drop=_type_ rename=(_freq_=recs));
run;
proc transpose data=dss_c_part3
               out =dss_c_part3 (drop=_name_)
               prefix=dss_cpt_;
   by scrssn vizday_ clstop;
   var dss_cpt;
run;

* merge;
data dss_c;
   merge dss_c_part2
         dss_c_part3
         dss_c_part1  /*** Cost in the last column ***/
   ;
   by scrssn vizday_ clstop;
run;

* filter out records before index stay;
proc sql;
   create table dss_d as
   select a.*,
          b.start,
          b.end,
          b.randate
   from dss_c as a
       left join
        index as b
   on a.scrssn eq b.scrssn
   order by scrssn,
            vizday_,
            clstop
   ;
```

```
quit;

data dss_e       (rename=(vizday_=vizday))
     dss_e_extra (rename=(vizday_=vizday))
   ;
   set dss_d;
   format dt date9.;
   if         not missing(end)   then dt=end;
      else if not missing(start) then dt=start;
      else                            dt=randate;
   if vizday_ ge dt then output dss_e;
      else               output dss_e_extra;
run;

/*
NOTE: There were 826946 observations read from the data set WORK.DSS_D.
NOTE: The data set WORK.DSS_E has 628448 observations and 13 variables.
NOTE: The data set WORK.DSS_E_EXTRA has 198498 observations and 13 variables.
*/

proc summary data=dss_e nway missing;
   class clstop;
   output out=dss_e_chk1 (drop=_type_ rename=(_freq_=recs));
run;

************************************************************************;
* 03. SE outpatient                                                    ;
************************************************************************;

%let kp_op2a = _src_desc_ _src_fy_ scrssn vizday cl clc cpt: dxlsf dxf:
                costn costl paymherc;

%let kp_op2b = _src_desc_ _src_fy_ scrssn vizday cl clc cpt: dxlsf dxf:;

data se_a;
   set &se_00_10  (keep=&kp_op2a)
       &se_11     (keep=&kp_op2a)
       &se_12     (keep=&kp_op2a)
       &se_13     (keep=&kp_op2b)   /*** Avg Cost Not Available ***/
       &se_14     (keep=&kp_op2b)
   ;
  * remove format from SCRSSN;
   format scrssn;
run;
/*
NOTE: There were 593774 observations read from the data set TODDW._SE00_10.
NOTE: There were 57317 observations read from the data set TODDW._SE11_NEW.
NOTE: There were 55443 observations read from the data set TODDW._SE12_NEW.
NOTE: There were 53641 observations read from the data set TODDW._SE13.
NOTE: There were 51064 observations read from the data set TODDW._SE14.
NOTE: The data set WORK.SE_A has 811239 observations and 99 variables.
*/

* drop those CPT codes that are really modifiers;
proc contents data=se_a varnum out=se_pc noprint;
run;
proc sort data=se_pc;
   by varnum;
run;
data se_pcx;
   set se_pc;
   if index(NAME,"MOD") > 0;
run;

proc sql noprint;
   select NAME into :xlist separated by " "
   from se_pcx
   ;
quit;

data se_b;
```

```
   set se_a;
   format vizday_ date9.;
   clstop=put(cl,z3.);
   vizday_=vizday;
   drop &xlist;
run;

proc sort data=se_b;
   by scrssn vizday_ clstop;
run;

* PART1;
proc summary data=se_b nway missing;
   class scrssn vizday_ clstop;
   var costn costl paymherc;
   output out=se_c_part1 (drop=_type_ rename=(_freq_=recs)) sum=;
run;

* PART2 -- diagnosis;
data se_c_dx;
   set se_b;
   length dx $5;
   rec=_n_;
   array dx_ (*) dxlsf dxf2--dxf10;
   do i=1 to dim(dx_);
      if not missing(dx_(i)) then do;
         dx=dx_(i);
         output;
      end;
   end;
run;

* PART2 -- diagnosis -- NO REPEAT OF DX;
data se_c_dx_;
   set se_c_dx;
   by scrssn vizday_ clstop;
   retain dx_list
          dx_flag
          dx_count
   ;
   length dx_list $200;        /*** ADJ THIS AS NECESSARY ***/
   if first.clstop then do;
      dx_list =trim(dx);
      dx_flag =0;
      dx_count=1;
   end;
   else do;
      do i=1 to dx_count;
         if dx eq scan(dx_list,i,"~") then dx_flag=1;
      end;
      if dx_flag eq 0 then dx_list=trim(dx_list)||"~"||trim(dx);
      dx_flag=0;
      dx_count+1;
   end;
   drop i dx_flag;
run;
data se_c_dx_;
   set se_c_dx_;
   by scrssn vizday_ clstop;
   num_elements=count(dx_list,"~")+1;
   if last.clstop;
   keep scrssn vizday_ clstop num_elements dx_list;
run;
data se_c_dx_;
   set se_c_dx_;
   length dx $5;
   do i=1 to num_elements;
      dx=scan(dx_list,i,"~");
      output;
   end;
run;
```

```
proc transpose data=se_c_dx_
               out =se_c_part2 (drop=_name_)
               prefix=se_dx_
   ;
   by scrssn vizday_ clstop;
   var dx;
run;

* PART3 -- CPT;
data se_c_cpt;
   set se_b;
   length cpt $5;
   rec=_n_;
   array cpt_ (*) cpt1--cpt20;
   do i=1 to dim(cpt_);
      if not missing(cpt_(i)) then do;
         cpt=cpt_(i);
         output;
      end;
   end;
run;

* PART3 -- CPT -- NO REPEAT OF CPT;
data se_c_cpt_;
   set se_c_cpt;
   by scrssn vizday_ clstop;
   retain cpt_list
          cpt_flag
          cpt_count
   ;
   length cpt_list $250;        /*** ADJ THIS AS NECESSARY ***/
   if first.clstop then do;
      cpt_list =trim(cpt);
      cpt_flag =0;
      cpt_count=1;
   end;
   else do;
      do i=1 to cpt_count;
         if cpt eq scan(cpt_list,i,"~") then cpt_flag=1;
      end;
      if cpt_flag eq 0 then cpt_list=trim(cpt_list)||"~"||trim(cpt);
      cpt_flag=0;
      cpt_count+1;
   end;
   drop i cpt_flag;
run;
data se_c_cpt_;
   set se_c_cpt_;
   by scrssn vizday_ clstop;
   num_elements=count(cpt_list,"~")+1;
   if last.clstop;
   keep scrssn vizday_ clstop num_elements cpt_list;
run;
data se_c_cpt_;
   set se_c_cpt_;
   length cpt $5;
   do i=1 to num_elements;
      cpt=scan(cpt_list,i,"~");
      output;
   end;
run;
proc transpose data=se_c_cpt_
               out =se_c_part3 (drop=_name_)
               prefix=se_cpt_
   ;
   by scrssn vizday_ clstop;
   var cpt;
run;

* merge;
data se_c;
```

```
   merge se_c_part2
         se_c_part3
         se_c_part1    /*** Cost in the last column ***/
   ;
   by scrssn vizday_ clstop;
run;

* filter out records before index stay;
proc sql;
   create table se_d as
   select a.*,
          b.start,
          b.end,
          b.randate
   from se_c as a
       left join
        index as b
   on a.scrssn eq b.scrssn
   order by scrssn,
            vizday_,
            clstop
   ;
quit;

data se_e       (rename=(vizday_=vizday))
     se_e_extra (rename=(vizday_=vizday))
   ;
   set se_d;
   format dt date9.;
   if         not missing(end)   then dt=end;
      else if not missing(start) then dt=start;
      else                            dt=randate;
   if vizday_ ge dt then output se_e;
      else               output se_e_extra;
run;
/*
NOTE: There were 731500 observations read from the data set WORK.SE_D.
NOTE: The data set WORK.SE_E has 554498 observations and 63 variables.
NOTE: The data set WORK.SE_E_EXTRA has 177002 observations and 63 variables.
*/

proc summary data=se_e nway missing;
   class clstop;
   output out=se_e_chk1 (drop=_type_ rename=(_freq_=recs));
run;

*************************************************************************;
* 04. merge DSS and SE                                                  ;
*************************************************************************;

data c1;
   format adamc_src;
   merge dss_e (in=in1 drop=recs start--dt)
         se_e  (in=in2 drop=recs start--dt)
   ;
   by scrssn vizday clstop;
   length  adamc_src $20;
   if in1 and in2 then adamc_src="DSS OPAT and SE";
      else if in1 then adamc_src="DSS OPAT Only";
      else if in2 then adamc_src="SE Only";
   format scrssn ssn11.;
   label adamc_src="Source"
         dss_dx_1 ="DSS OPAT Dx 1"
         dss_dx_2 ="DSS OPAT Dx 2"
         dss_cpt_1="DSS OPAT CPT 1"
         dss_cpt_2="DSS OPAT CPT 2"
         se_dx_1  ="SE Dx 1"
         se_dx_2  ="SE Dx 2"
         se_dx_3  ="SE Dx 3"
         se_dx_4  ="SE Dx 4"
         se_dx_5  ="SE Dx 5"
```

```
          se_dx_6  ="SE Dx 6"
          se_dx_7  ="SE Dx 7"
          se_dx_8  ="SE Dx 8"
          se_dx_9  ="SE Dx 9"
          se_dx_10 ="SE Dx 10"
          se_dx_11 ="SE Dx 11"
          se_dx_12 ="SE Dx 12"
          se_dx_13 ="SE Dx 13"
          se_dx_14 ="SE Dx 14"
          se_dx_15 ="SE Dx 15"
          se_dx_16 ="SE Dx 16"
          se_dx_17 ="SE Dx 17"
          se_dx_18 ="SE Dx 18"
          se_cpt_1 ="SE CPT 1"
          se_cpt_2 ="SE CPT 2"
          se_cpt_3 ="SE CPT 3"
          se_cpt_4 ="SE CPT 4"
          se_cpt_5 ="SE CPT 5"
          se_cpt_6 ="SE CPT 6"
          se_cpt_7 ="SE CPT 7"
          se_cpt_8 ="SE CPT 8"
          se_cpt_9 ="SE CPT 91"
          se_cpt_10="SE CPT 10"
          se_cpt_11="SE CPT 11"
          se_cpt_12="SE CPT 12"
          se_cpt_13="SE CPT 13"
          se_cpt_14="SE CPT 14"
          se_cpt_15="SE CPT 15"
          se_cpt_16="SE CPT 16"
          se_cpt_17="SE CPT 17"
          se_cpt_18="SE CPT 18"
          se_cpt_19="SE CPT 19"
          se_cpt_20="SE CPT 20"
          se_cpt_21="SE CPT 21"
          se_cpt_22="SE CPT 22"
          se_cpt_23="SE CPT 23"
          se_cpt_24="SE CPT 24"
          se_cpt_25="SE CPT 25"
          se_cpt_26="SE CPT 26"
          se_cpt_27="SE CPT 27"
          se_cpt_28="SE CPT 28"
          se_cpt_29="SE CPT 29"
          se_cpt_30="SE CPT 30"
          se_cpt_31="SE CPT 31"
          se_cpt_32="SE CPT 32"
          se_cpt_33="SE CPT 33"
          se_cpt_34="SE CPT 34"
          vizday   ="Date of Visit (SASDate)"
   ;
run;

/*
NOTE: There were 628448 observations read from the data set WORK.DSS_E.
NOTE: There were 554498 observations read from the data set WORK.SE_E.
NOTE: The data set WORK.C1 has 633342 observations and 64 variables.
*/

* add description for clinic stop -- see what format to use;
proc format library=library cntlout=a; run;

data a;
   set a;
   where fmtname=:"YCLIN";
run;

* use YCLINICE format;
data &outf (label="&lbl");
   format adamc_src scrssn vizday clstop cl_desc;
   set c1;
   length cl_desc $40;
   if anyalpha(clstop) > 0 then cl_desc=clstop;
```

```
      else                       cl_desc=put(input(clstop,3.),yclinich.);   /*** latest format
***/
   label cl_desc="Clinic Stop Description";
run;

*************************************************************************;

proc summary data=&outf nway missing;
   class adamc_src;
   var ocst_tot costn costl;
   output out=s (drop=_type_ rename=(_freq_=recs)) sum=;
run;

data s_;
   set s;
   if         adamc_src="DSS OPAT and SE" then ord=1;
      else if adamc_src="DSS OPAT Only"   then ord=2;
      else                                     ord=3;
run;

proc sort data=s_;
   by ord;
run;

proc print data=s_ (drop=ord) noobs label double;
    title1 "CSP517 -- Summary of Costs -- OP Visits -- Index Thru FY14";
    format ocst_tot
           costn
           costl dollar15.
           recs comma10.
    ;
    sum _numeric_;
run;

*************************************************************************;
* check missing;
*%include "/export/home/achow/code/chk_missing.sas";
%include "./chk_missing.sas";
%chk_missing(indsn  = &outf /* Input SAS dataset name  */,
             outdsn = m     /* Output SAS dataset name */
            );

proc print data=m noobs label;
    title1 "CSP517 -- Check Missing Values -- OP Visits -- Index Thru FY14";
    title2 "CPT and Dx Codes Are NON-REPEATING (i.e UNIQUE)";
    format NOBS comma8.
           miss_pct percent12.4
    ;
run; title;

*************************************************************************;
proc contents data=&outf varnum;
    title1 "CSP517 -- PROC CONTENTS -- OP Visits Data Set -- Index Thru FY14";
    title2 "DSS Cost and Average Cost (National/Local)";
run; title;


*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********31g_process_fb_fy14.sas**********
*************************************************************************;
* Name: /export/data/csp517/csp517/programs/31g_process_fb_fy14.sas       ;
*                                                                         ;
* Description: process Fee Basis (IP and OP) ... thru FY14                ;
*                                                                         ;
* Input:  toddw2.analy_cabg_30may2014  (use to identify INDEX stay)       ;
*                                                                         ;
*         toddw._fb_inpt00_10                                             ;
*         toddw._fb_inpt11                                                ;
*         toddw._fb_inpt12                                                ;
```

```
*         toddw._fb_inpt13                                                    ;
*         toddw._fb_inpt14        <<<>>>                                      ;
*                                                                             ;
*         toddw._fb_ipancil00_10                                              ;
*         toddw._fb_ipancil11                                                 ;
*         toddw._fb_ipancil12                                                 ;
*         toddw._fb_ipancil13                                                 ;
*         toddw._fb_ipancil14     <<<>>>                                      ;
*                                                                             ;
*         toddw._fb_med00_10                                                  ;
*         toddw._fb_med11                                                     ;
*         toddw._fb_med12                                                     ;
*         toddw._fb_med13                                                     ;
*         toddw._fb_med14         <<<>>>                                      ;
*                                                                             ;
* Output: toddw3.adamc_fb_stays_to_fy14                                       ;
*         toddw3.adamc_fb_visits_to_fy14                                      ;
*                                                                             ;
* Ext.Macros: NO                                                              ;
*                                                                             ;
* Run Under:  SAS 9.1.3 for Unix                                              ;
*                                                                             ;
* Date      Author    Modification History                                    ;
* ------------------------------------------------------------------------- ;
* 13MAY14   AdamC                                                           ;
* 15SEP15   Howard Jiang  Modified prog 29g                                   ;
*****************************************************************************;

options ps=70 ls=160 nodate nocenter nosymbolgen nomprint varlenchk=nowarn;

libname toddw   "/export/data/csp517/csp517/datasets";
libname toddw2  "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw3  "/export/data/csp517/csp517/datasets/analy_w_fy14";
libname library "/static/data/sasfmt/ptffmt";

%let index = toddw2.analy_cabg_30may2014;  /*** OLD Analysis File ***/

%let fbip_00_10  = toddw._fb_inpt00_10;
%let fbip_11     = toddw._fb_inpt11;
%let fbip_12     = toddw._fb_inpt12;
%let fbip_13     = toddw._fb_inpt13;
%let fbip_14     = toddw._fb_inpt14;

%let fbanc_00_10 = toddw._fb_ipancil00_10;
%let fbanc_11    = toddw._fb_ipancil11;
%let fbanc_12    = toddw._fb_ipancil12;
%let fbanc_13    = toddw._fb_ipancil13;
%let fbanc_14    = toddw._fb_ipancil14;

%let fbmed_00_10 = toddw._fb_med00_10;
%let fbmed_11    = toddw._fb_med11;
%let fbmed_12    = toddw._fb_med12;
%let fbmed_13    = toddw._fb_med13;
%let fbmed_14    = toddw._fb_med14;

%let outf1 = toddw3.adamc_fb_stays_to_fy14;       /*** Permanent Data Set Name  ***/
%let lbl1  = Fee Basis STAYS From Index to FY14;  /*** Permanent Data Set Label ***/

%let outf2 = toddw3.adamc_fb_visits_to_fy14;      /*** Permanent Data Set Name  ***/
%let lbl2  = Fee Basis VISITS From Index to FY14; /*** Permanent Data Set Label ***/


*****************************************************************************;
* 0.  ... use admitday or disday or randate to filter                       ;
*****************************************************************************;

data index;
   format idx_admitday
          idx_disday date9.
   ;
   set &index;
```

```
   format start
          end date9.
   ;
   start=idx_admitday;
   end  =idx_disday;
   rename idx_admitday=admitday
          idx_disday  =disday
   ;
   keep scrssn idx_admitday idx_disday randate start end;
run;

*************************************************************************;
* 1. Fee Basis IP                                                       ;
*************************************************************************;

data fb_ip_a;
   length DX1-DX25 DXLSF SURG9CD1-SURG9CD25 $6.;
   set &fbip_00_10
       &fbip_11
       &fbip_12
       &fbip_13
       &fbip_14

   ;
   format dos_from dos_to date9.;
   dos_from = mdy(input(substr(treatdtf,1,2),2.0),
                  input(substr(treatdtf,3,2),2.0),
                  input(substr(treatdtf,5,4),4.0)
                 );
   dos_to   = mdy(input(substr(treatdto,1,2),2.0),
                  input(substr(treatdto,3,2),2.0),
                  input(substr(treatdto,5,4),4.0)
                 );
run;
/*
NOTE: There were 986 observations read from the data set TODDW._FB_INPT00_10.
NOTE: There were 121 observations read from the data set TODDW._FB_INPT11.
NOTE: There were 123 observations read from the data set TODDW._FB_INPT12.
NOTE: There were 157 observations read from the data set TODDW._FB_INPT13.
NOTE: There were 172 observations read from the data set TODDW._FB_INPT14.
NOTE: The data set WORK.FB_IP_A has 1559 observations and 153 variables.
*/

proc sort data=fb_ip_a
          out =fb_ip_b;
   by scrssn
      sta3n
      ven13n
      paycat
      descending dos_to
      descending dos_from;
run;

data fb_ip_c;
   format scrssn
          sta3n
          ven13n
          paycat
          dos_from
          dos_to
          treatdtf
          treatdto
   ;
   set fb_ip_b;
   format startdt
          stopdt
          xstartdt
          xstopdt date9.
          admitid z10.
   ;
   retain startdt stopdt admitid;
```

```
   by scrssn
      sta3n
      ven13n
      paycat
      descending dos_to
      descending dos_from
   ;
   if first.sta3n  or first.ven13n or first.paycat then do;
      startdt=dos_from;
      stopdt =dos_to;
      admitid + 1;
   end;
   else do;
      if dos_to ge startdt then do;
         xstopdt  = startdt - 1;
         xstartdt = dos_from;
         if xstartdt le xstopdt then do;
            stopdt  = xstopdt;
            startdt = xstartdt;
         end;
         * fix if same DOS_FROM and DOS_TO for each SCRSSN;
         if not first.dos_to then do; xstopdt=stopdt; chkme="X"; end;
      end;
      else do;
         xstopdt  = stopdt;
         xstartdt = startdt;
         stopdt   = dos_to;
         startdt  = dos_from;
         if (xstartdt - dos_to) gt 1 then admitid = admitid + 1;
      end;
   end;
   drop xstartdt xstopdt;
run;

data fb_ip_d;
   set fb_ip_c;

   paycat_code=paycat;

   days=max(1,intck("days",dos_from, dos_to));
   perdiem=amount/days;
run;

*************************************************************************;

* expect 1,146 stays per FB_IP_D;
proc summary data=fb_ip_d nway missing;
   class admitid
         scrssn
         sta3n
         ven13n
         paycat
   ;
   var startdt stopdt amount;
   output out=fb_ip_e_part1 (drop=_type_ rename=(_freq_=recs)) min(startdt)=startdt
                                                               max(stopdt) =stopdt
                                                               sum(amount) =amount
   ;
run;
/*
NOTE: There were 1559 observations read from the data set WORK.FB_IP_D.
NOTE: The data set WORK.FB_IP_E_PART1 has 1273 observations and 9 variables.
*/
data fb_ip_e_part1;
   format admitid scrssn sta3n ven13n paycat startdt stopdt days;
   set fb_ip_e_part1;
   days=max(1,intck("days",startdt, stopdt));
   rename startdt=admitday
          stopdt =disday
   ;
   label startdt="Admit Date"
```

```
         stopdt ="Discharge Date"
         days   ="Days (LOS)"
   ;
run;

*************************************************************************;

* now the diagnosis;
data fb_ip_e_part2;
   set fb_ip_d;
   length dx $5;
   rec=_n_;
   array dx_ (*) dxlsf dx1--dx25;
   do i=1 to dim(dx_);
      if not missing(dx_(i)) then do;
         dx=dx_(i);
         output;
      end;
   end;
run;

* NO REPEAT OF DX codes;
data fb_ip_e_part2;
   set fb_ip_e_part2;
   by admitid;
   retain dx_list
          dx_flag
          dx_count
   ;
   length dx_list $200;        /*** ADJ THIS AS NECESSARY ***/
   if first.admitid then do;
      dx_list =trim(dx);
      dx_flag =0;
      dx_count=1;
   end;
   else do;
      do i=1 to dx_count;
         if dx eq scan(dx_list,i,"~") then dx_flag=1;
      end;
      if dx_flag eq 0 then dx_list=trim(dx_list)||"~"||trim(dx);
      dx_flag=0;
      dx_count+1;
   end;
   drop i dx_flag;
run;

data fb_ip_e_part2;
   set fb_ip_e_part2;
   by admitid;
   num_elements=count(dx_list,"~")+1;
   if last.admitid;
   keep admitid num_elements dx_list;
run;

data fb_ip_e_part2;
   set fb_ip_e_part2;
   length dx $5;
   do i=1 to num_elements;
      dx=scan(dx_list,i,"~");
      output;
   end;
run;

proc transpose data=fb_ip_e_part2
               out =fb_ip_e_part2 (drop=_name_)
               prefix=dx_
   ;
   by admitid;
   var dx;
run;
```

```
data fb_ip_e_part2;
   set fb_ip_e_part2;
   label dx_1 ="Dx 1"
         dx_2 ="Dx 2"
         dx_3 ="Dx 3"
         dx_4 ="Dx 4"
         dx_5 ="Dx 5"
         dx_6 ="Dx 6"
         dx_7 ="Dx 7"
         dx_8 ="Dx 8"
         dx_9 ="Dx 9"
         dx_10="Dx 10"
         dx_11="Dx 11"
         dx_12="Dx 12"
         dx_13="Dx 13"
         dx_14="Dx 14"
         dx_15="Dx 15"
         dx_16="Dx 16"
         dx_17="Dx 17"
         dx_18="Dx 18"
         dx_19="Dx 19"
         dx_20="Dx 20"    /*** ADDED 5/13/2014 ***/
         dx_21="Dx 21"    /*** ADDED 5/13/2014 ***/
         dx_22="Dx 22"    /*** ADDED 5/13/2014 ***/
         dx_23="Dx 23"    /*** ADDED 5/13/2014 ***/
   ;
run;

*************************************************************************;

* now ICD9 procedures/ surgical codes;
data fb_ip_e_part3;
   set fb_ip_d;
   length ps $5;
   rec=_n_;
   array ppps (*) surg9cd1-surg9cd25;
   do i=1 to dim(ppps);
      if not missing(ppps(i)) then do;
         ps=ppps(i);
         output;
      end;
   end;
run;

* NO REPEAT OF SAME PROCEDURE or SURGICAL codes;
data fb_ip_e_part3;
   set fb_ip_e_part3;
   by admitid;
   retain ps_list
          ps_flag
          ps_count
   ;
   length ps_list $200;        /*** ADJ THIS AS NECESSARY ***/
   if first.admitid then do;
      ps_list =trim(ps);
      ps_flag =0;
      ps_count=1;
   end;
   else do;
      do i=1 to ps_count;
         if ps eq scan(ps_list,i,"~") then ps_flag=1;
      end;
      if ps_flag eq 0 then ps_list=trim(ps_list)||"~"||trim(ps);
      ps_flag=0;
      ps_count+1;
   end;
   drop i ps_flag;
run;

data fb_ip_e_part3;
   set fb_ip_e_part3;
```

```
   by admitid;
   num_elements=count(ps_list,"~")+1;
   if last.admitid;
   keep admitid num_elements ps_list;
run;

data fb_ip_e_part3;
   set fb_ip_e_part3;
   length ps $5;
   do i=1 to num_elements;
      ps=scan(ps_list,i,"~");
      output;
   end;
run;

proc transpose data=fb_ip_e_part3
               out =fb_ip_e_part3 (drop=_name_)
               prefix=proc_surg_cd_
   ;
   by admitid;
   var ps;
run;

data fb_ip_e_part3;
   set fb_ip_e_part3;
   label proc_surg_cd_1  ="Procedure Surgical Code 1"
         proc_surg_cd_2  ="Procedure Surgical Code 2"
         proc_surg_cd_3  ="Procedure Surgical Code 3"
         proc_surg_cd_4  ="Procedure Surgical Code 4"
         proc_surg_cd_5  ="Procedure Surgical Code 5"
         proc_surg_cd_6  ="Procedure Surgical Code 6"   /*** ADDED 5/13/2014 ***/
         proc_surg_cd_7  ="Procedure Surgical Code 7"   /*** ADDED 5/13/2014 ***/
         proc_surg_cd_8  ="Procedure Surgical Code 8"   /*** ADDED 5/13/2014 ***/
         proc_surg_cd_9  ="Procedure Surgical Code 9"   /*** ADDED 5/13/2014 ***/
         proc_surg_cd_10 ="Procedure Surgical Code 10"  /*** ADDED 5/13/2014 ***/
   ;
run;

*************************************************************************;

* combine and filter;

data fb_ip_e;
   merge fb_ip_e_part1 (drop=recs amount)
         fb_ip_e_part2
         fb_ip_e_part3
         fb_ip_e_part1 (keep=admitid recs amount)
   ;
   by admitid;
   label recs="# FeeBasis IP Records";
run;

proc sql;
   create table fb_ip_f as
   select a.*,
          b.start,
          b.end,
          b.randate
   from fb_ip_e as a,
        index as b
   where a.scrssn eq b.scrssn
   order by admitid
   ;
quit;

data fb_ip_g      (drop=start end randate dt)
     fb_ip_g_xtra (drop=start end randate dt)
   ;
   set fb_ip_f;
   format dt date9.;
   format amount dollar10.2;
```

```
   amount=round(amount,0.01);
   if not missing(start)        then dt=start;
      else if  not missing(end) then dt=end;
      else                           dt=randate;
   if admitday ge dt then output fb_ip_g;
      else                output fb_ip_g_xtra;

run;
/*
NOTE: There were 1273 observations read from the data set WORK.FB_IP_F.
NOTE: The data set WORK.FB_IP_G has 998 observations and 63 variables.
NOTE: The data set WORK.FB_IP_G_XTRA has 275 observations and 63 variables.
*/

proc datasets nolist;
   delete
      fb_ip_a
      fb_ip_b
      fb_ip_c
      fb_ip_d
      fb_ip_e
      fb_ip_e_:
      fb_ip_f
      fb_ip_g_xtra
   ;
quit;

*************************************************************************;
* 2A. IP ANCILLARY -- those that can be merged with the STAYS           ;
*************************************************************************;

* TREATDTF and TREATDTO are the same;
data fb_ipanc_a;
   length DXLSF $6.;
   set &fbanc_00_10
       &fbanc_11
       &fbanc_12
       &fbanc_13
       &fbanc_14

   ;
   format dos date9.;
   dos=mdy(input(substr(treatdtf,1,2),2.0),
           input(substr(treatdtf,3,2),2.0),
           input(substr(treatdtf,5,4),4.0)
          );
run;
/*
NOTE: There were 10234 observations read from the data set TODDW._FB_IPANCIL00_10.
NOTE: There were 1365 observations read from the data set TODDW._FB_IPANCIL11.
NOTE: There were 1731 observations read from the data set TODDW._FB_IPANCIL12.
NOTE: There were 1472 observations read from the data set TODDW._FB_IPANCIL13.
NOTE: There were 1997 observations read from the data set TODDW._FB_IPANCIL14.
NOTE: The data set WORK.FB_IPANC_A has 16799 observations and 82 variables.
*/

proc sort data=fb_ipanc_a
          out =fb_ipanc_b;
   by scrssn
      sta3n
      dos
   ;
run;

proc sql;
   create table fb_ipanc_c as
   select a.*,
          b.start,
          b.end,
          b.randate
   from fb_ipanc_b as a,
```

```
        index as b
   where a.scrssn eq b.scrssn
   order by scrssn,
            dos
   ;
quit;

data fb_ipanc_d      (drop=start end randate dt)
     fb_ipanc_d_xtra (drop=start end randate dt)
   ;
   set fb_ipanc_c;
   format dt date9.;
   if not missing(start)       then dt=start;
      else if not missing(end) then dt=end;
      else                          dt=randate;
   if dos ge dt then output fb_ipanc_d;
      else           output fb_ipanc_d_xtra;
run;
/*
NOTE: There were 16799 observations read from the data set WORK.FB_IPANC_C.
NOTE: The data set WORK.FB_IPANC_D has 14043 observations and 82 variables.
NOTE: The data set WORK.FB_IPANC_D_XTRA has 2756 observations and 82 variables.
*/

*************************************************************************;

* link date to an ADMITID;

proc sql;
   create table fb_ipanc_e as
   select a.*,
          b.admitid,
          b.amount  as ip_amount   /*** use as a tie breaker ***/
   from fb_ipanc_d as a
       left join
        fb_ip_g as b
   on a.scrssn eq b.scrssn and
      a.sta3n eq b.sta3n and
      b.admitday le a.dos le b.disday
   order by scrssn,
            sta3n,
            dos,
            ip_amount descending,
            admitid
   ;
quit;
/*
NOTE: Table WORK.FB_IPANC_E created, with 14468 rows and 84 columns.
*/

* collapse the data -- RECORDS OVER STATED;
proc summary data=fb_ipanc_e  nway missing;
   class scrssn
         sta3n
         dos
         admitid
         ip_amount
   ;
   var amount;
   output out=fb_ipanc_f (drop=_type_ rename=(_freq_=ipancil_recs)) sum=;
run;

* see how DOS may be assigned to different AMITIDS;
data fb_ipanc_f_chk;
   set fb_ipanc_f;
   by scrssn
      sta3n
      dos
      admitid
   ;
   if not (first.dos and last.dos);
```

```
run;

* fix multiple ADMITID -- choose IP_AMOUNT that is highest;
proc sort data=fb_ipanc_f
          out =fb_ipanc_g;
   by scrssn
      sta3n
      dos
      descending ip_amount
      admitid
   ;
run;

data fb_ipanc_g_admit;
   set fb_ipanc_g;
   by scrssn
      sta3n
      dos
      descending ip_amount
      admitid
   ;
   if first.dos;
   drop ipancil_recs AMOUNT;
run;
/*
NOTE: There were 14043 observations read from the data set WORK.FB_IPANC_H.
NOTE: The data set WORK.FB_IPANC_J has 2437 observations and 83 variables.
*/

*************************************************************************;

* link back to FB_IPANCIL_E -- expect to lose some records;

data fb_ipanc_h
     fb_ipanc_h_extra;
   ;
   merge fb_ipanc_e       (in=in1)
         fb_ipanc_g_admit (in=in2)
   ;
   by scrssn
      sta3n
      dos
      descending ip_amount
      admitid

   ;
   if in1 and in2 then output fb_ipanc_h;
      else if in2 then output fb_ipanc_h;
      else             output fb_ipanc_h_extra;
run;
/*
NOTE: There were 14468 observations read from the data set WORK.FB_IPANC_E.
NOTE: There were 4167 observations read from the data set WORK.FB_IPANC_G_ADMIT.
NOTE: The data set WORK.FB_IPANC_H has 14043 observations and 84 variables.
NOTE: The data set WORK.FB_IPANC_H_EXTRA has 425 observations and 84 variables.
*/

* FB_IPANC_H_EXTRA looks right -- these are thae records that should be dropped;
* b/c it was inflated in FB_IPANC_E;

proc sort data=fb_ipanc_h;
   by admitid dos lineno;
run;

*************************************************************************;

* COST 1st;
proc summary data=fb_ipanc_h nway missing;
   where admitid ne .;
   class admitid;
   var amount;
```

```
   output out=fb_ipanc_i_part1 (drop=_type_ rename=(_freq_=ip_ancil_recs)) sum=;
run;

* DXLSF 2nd -- NO REPEAT OF DX;
data fb_ipanc_i_part2;
   set fb_ipanc_h;
   if admitid ne .;
   if dxlsf ne "";
run;
data fb_ipanc_i_part2;
   set  fb_ipanc_i_part2;
   by admitid;
   retain dx_list
          dx_flag
          dx_count
   ;
   length dx_list $200;        /*** ADJ THIS AS NECESSARY ***/
   if first.admitid then do;
      dx_list =trim(dxlsf);
      dx_flag =0;
      dx_count=1;
   end;
   else do;
      do i=1 to dx_count;
         if dxlsf eq scan(dx_list,i,"~") then dx_flag=1;
      end;
      if dx_flag eq 0 then dx_list=trim(dx_list)||"~"||trim(dxlsf);
      dx_flag=0;
      dx_count+1;
   end;
   drop i dx_flag;
run;
data fb_ipanc_i_part2;
   set fb_ipanc_i_part2;
   by admitid;
   num_elements=count(dx_list,"~")+1;
   if last.admitid;
   keep admitid num_elements dx_list;
run;
data fb_ipanc_i_part2;
   set fb_ipanc_i_part2;
   length dx $5;
   do i=1 to num_elements;
      dx=scan(dx_list,i,"~");
      output;
   end;
run;
proc transpose data=fb_ipanc_i_part2
               out =fb_ipanc_i_part2 (drop=_name_)
               prefix=ancil_dx_
   ;
   by admitid;
   var dx;
run;

* CPT1 3rd -- NO REPEAT OF CPT;
data fb_ipanc_i_part3;
   set fb_ipanc_h;
   if admitid ne .;
   if cpt1 ne "";
run;
data fb_ipanc_i_part3;
   set  fb_ipanc_i_part3;
   by admitid;
   retain cpt_list
          cpt_flag
          cpt_count
   ;
   length cpt_list $400;        /*** ADJ THIS AS NECESSARY ***/
   if first.admitid then do;
      cpt_list =trim(cpt1);
```

```
      cpt_flag =0;
      cpt_count=1;
   end;
   else do;
      do i=1 to cpt_count;
         if cpt1 eq scan(cpt_list,i,"~") then cpt_flag=1;
      end;
      if cpt_flag eq 0 then cpt_list=trim(cpt_list)||"~"||trim(cpt1);
      cpt_flag=0;
      cpt_count+1;
   end;
   drop i cpt_flag;
run;
data fb_ipanc_i_part3;
   set fb_ipanc_i_part3;
   by admitid;
   num_elements=count(cpt_list,"~")+1;
   if last.admitid;
   keep admitid num_elements cpt_list;
run;
data fb_ipanc_i_part3;
   set fb_ipanc_i_part3;
   length cpt $5;
   do i=1 to num_elements;
      cpt=scan(cpt_list,i,"~");
      output;
   end;
run;
proc transpose data=fb_ipanc_i_part3
               out =fb_ipanc_i_part3 (drop=_name_)
               prefix=ancil_cpt_
   ;
   by admitid;
   var cpt;
run;

*************************************************************************;

* combine;
data fb_ipanc_i;
   merge  fb_ipanc_i_part2
          fb_ipanc_i_part3
          fb_ipanc_i_part1
   ;
   by admitid;
   format amount dollar10.2;
   amount=round(amount,0.01);
   rename amount=ip_ancil_amount;
   label ancil_dx_1  ="Dx 1 (IP Ancillary)"
         ancil_dx_2  ="Dx 2 (IP Ancillary)"
         ancil_dx_3  ="Dx 3 (IP Ancillary)"
         ancil_dx_4  ="Dx 4 (IP Ancillary)"
         ancil_dx_5  ="Dx 5 (IP Ancillary)"
         ancil_dx_6  ="Dx 6 (IP Ancillary)"
         ancil_dx_7  ="Dx 7 (IP Ancillary)"
         ancil_dx_8  ="Dx 8 (IP Ancillary)"
         ancil_dx_9  ="Dx 9 (IP Ancillary)"
         ancil_dx_10 ="Dx 10 (IP Ancillary)"
         ancil_dx_11 ="Dx 11 (IP Ancillary)"
         ancil_dx_12 ="Dx 12 (IP Ancillary)"
         ancil_dx_13 ="Dx 13 (IP Ancillary)"
         ancil_dx_14 ="Dx 14 (IP Ancillary)"
         ancil_dx_15 ="Dx 15 (IP Ancillary)"
         ancil_dx_16 ="Dx 16 (IP Ancillary)"
         ancil_dx_17 ="Dx 17 (IP Ancillary)"
         ancil_dx_18 ="Dx 18 (IP Ancillary)"
         ancil_dx_19 ="Dx 19 (IP Ancillary)"
         ancil_dx_20 ="Dx 20 (IP Ancillary)"
         ancil_dx_21 ="Dx 21 (IP Ancillary)"
         ancil_dx_22 ="Dx 22 (IP Ancillary)"
         ancil_dx_23 ="Dx 23 (IP Ancillary)"
```

```
ancil_dx_24 ="Dx 24 (IP Ancillary)"
ancil_dx_25 ="Dx 25 (IP Ancillary)"
ancil_dx_26 ="Dx 26 (IP Ancillary)"
ancil_dx_27 ="Dx 27 (IP Ancillary)"
ancil_dx_28 ="Dx 28 (IP Ancillary)"
ancil_dx_29 ="Dx 29 (IP Ancillary)"

ancil_cpt_1 ="CPT 1 (IP Ancillary)"
ancil_cpt_2 ="CPT 2 (IP Ancillary)"
ancil_cpt_3 ="CPT 3 (IP Ancillary)"
ancil_cpt_4 ="CPT 4 (IP Ancillary)"
ancil_cpt_5 ="CPT 5 (IP Ancillary)"
ancil_cpt_6 ="CPT 6 (IP Ancillary)"
ancil_cpt_7 ="CPT 7 (IP Ancillary)"
ancil_cpt_8 ="CPT 8 (IP Ancillary)"
ancil_cpt_9 ="CPT 9 (IP Ancillary)"
ancil_cpt_10="CPT 10 (IP Ancillary)"
ancil_cpt_11="CPT 11 (IP Ancillary)"
ancil_cpt_12="CPT 12 (IP Ancillary)"
ancil_cpt_13="CPT 13 (IP Ancillary)"
ancil_cpt_14="CPT 14 (IP Ancillary)"
ancil_cpt_15="CPT 15 (IP Ancillary)"
ancil_cpt_16="CPT 16 (IP Ancillary)"
ancil_cpt_17="CPT 17 (IP Ancillary)"
ancil_cpt_18="CPT 18 (IP Ancillary)"
ancil_cpt_19="CPT 19 (IP Ancillary)"
ancil_cpt_20="CPT 20 (IP Ancillary)"
ancil_cpt_21="CPT 21 (IP Ancillary)"
ancil_cpt_22="CPT 22 (IP Ancillary)"
ancil_cpt_23="CPT 23 (IP Ancillary)"
ancil_cpt_24="CPT 24 (IP Ancillary)"
ancil_cpt_25="CPT 25 (IP Ancillary)"
ancil_cpt_26="CPT 26 (IP Ancillary)"
ancil_cpt_27="CPT 27 (IP Ancillary)"
ancil_cpt_28="CPT 28 (IP Ancillary)"
ancil_cpt_29="CPT 29 (IP Ancillary)"
ancil_cpt_30="CPT 30 (IP Ancillary)"
ancil_cpt_31="CPT 31 (IP Ancillary)"
ancil_cpt_32="CPT 32 (IP Ancillary)"
ancil_cpt_33="CPT 33 (IP Ancillary)"
ancil_cpt_34="CPT 34 (IP Ancillary)"
ancil_cpt_35="CPT 35 (IP Ancillary)"
ancil_cpt_36="CPT 36 (IP Ancillary)"
ancil_cpt_37="CPT 37 (IP Ancillary)"
ancil_cpt_38="CPT 38 (IP Ancillary)"
ancil_cpt_39="CPT 34 (IP Ancillary)"
ancil_cpt_40="CPT 40 (IP Ancillary)"
ancil_cpt_41="CPT 41 (IP Ancillary)"
ancil_cpt_42="CPT 42 (IP Ancillary)"
ancil_cpt_43="CPT 43 (IP Ancillary)"
ancil_cpt_44="CPT 44 (IP Ancillary)"
ancil_cpt_45="CPT 45 (IP Ancillary)"
ancil_cpt_46="CPT 46 (IP Ancillary)"
ancil_cpt_47="CPT 47 (IP Ancillary)"
ancil_cpt_48="CPT 48 (IP Ancillary)"
ancil_cpt_49="CPT 49 (IP Ancillary)"
ancil_cpt_50="CPT 50 (IP Ancillary)"
ancil_cpt_51="CPT 51 (IP Ancillary)"
ancil_cpt_52="CPT 52 (IP Ancillary)"
ancil_cpt_53="CPT 53 (IP Ancillary)"
ancil_cpt_54="CPT 54 (IP Ancillary)"
ancil_cpt_55="CPT 55 (IP Ancillary)"
ancil_cpt_56="CPT 56 (IP Ancillary)"
ancil_cpt_57="CPT 57 (IP Ancillary)"
ancil_cpt_58="CPT 58 (IP Ancillary)"
ancil_cpt_59="CPT 59 (IP Ancillary)"
ancil_cpt_60="CPT 60 (IP Ancillary)"
ancil_cpt_61="CPT 61 (IP Ancillary)"
ancil_cpt_62="CPT 62 (IP Ancillary)"
ancil_cpt_63="CPT 63 (IP Ancillary)"
ancil_cpt_64="CPT 64 (IP Ancillary)"
```

```
         ip_ancil_recs="# FeeBasis IP Ancillary Records"
         amount       ="IP Ancillary Payment Amount"
   ;
run;

proc datasets nolist;
   delete
      fb_ipanc_a
      fb_ipanc_b
      fb_ipanc_c
      fb_ipanc_d:
      fb_ipanc_e
      fb_ipanc_f:
      fb_ipanc_g:
   ;
quit;

*************************************************************************;
* 2B. IP ANCILLARY -- those that can NOT be merged with the STAYS         ;
*************************************************************************;

* expect 1924 obs per data set FB_IPANC_H;
data fb_ipanc_j;
   set fb_ipanc_h;
   if admitid eq .;   /*** FILTER ***/
   drop admitid;
run;
/*
NOTE: There were 14043 observations read from the data set WORK.FB_IPANC_H.
NOTE: The data set WORK.FB_IPANC_J has 2437 observations and 83 variables.
*/

proc sort data=fb_ipanc_j;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
      lineno
   ;
run;

* COST 1st;
proc summary data=fb_ipanc_j nway missing;
   class scrssn
         sta3n
         ven13n
         paycat
         dos
   ;
   var amount;
   output out=fb_ipanc_k_part1 (drop=_type_ rename=(_freq_=ip_ancil_recs)) sum=;
run;

* DXLSF 2nd -- NO REPEAT OF DX;
data fb_ipanc_k_part2;
   set fb_ipanc_j;
   if dxlsf ne "";
run;
data fb_ipanc_k_part2;
   set  fb_ipanc_k_part2;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   retain dx_list
          dx_flag
          dx_count
```

```
   ;
   length dx_list $200;        /*** ADJ THIS AS NECESSARY ***/
   if first.dos then do;
      dx_list =trim(dxlsf);
      dx_flag =0;
      dx_count=1;
   end;
   else do;
      do i=1 to dx_count;
         if dxlsf eq scan(dx_list,i,"~") then dx_flag=1;
      end;
      if dx_flag eq 0 then dx_list=trim(dx_list)||"~"||trim(dxlsf);
      dx_flag=0;
      dx_count+1;
   end;
   drop i dx_flag;
run;
data fb_ipanc_k_part2;
   set fb_ipanc_k_part2;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   num_elements=count(dx_list,"~")+1;
   if last.dos;
   keep scrssn sta3n ven13n paycat dos num_elements dx_list;
run;
data fb_ipanc_k_part2;
   set fb_ipanc_k_part2;
   length dx $5;
   do i=1 to num_elements;
      dx=scan(dx_list,i,"~");
      output;
   end;
run;
proc transpose data=fb_ipanc_k_part2
               out =fb_ipanc_k_part2 (drop=_name_)
               prefix=dx_
   ;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   var dx;
run;

* CPT1 3rd -- NO REPEAT OF CPT;
data fb_ipanc_k_part3;
   set fb_ipanc_j;
   if cpt1 ne "";
run;
data fb_ipanc_k_part3;
   set  fb_ipanc_k_part3;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   retain cpt_list
          cpt_flag
          cpt_count
   ;
   length cpt_list $200;        /*** ADJ THIS AS NECESSARY ***/
   if first.dos then do;
      cpt_list =trim(cpt1);
      cpt_flag =0;
```

```
      cpt_count=1;
   end;
   else do;
      do i=1 to cpt_count;
         if cpt1 eq scan(cpt_list,i,"~") then cpt_flag=1;
      end;
      if cpt_flag eq 0 then cpt_list=trim(cpt_list)||"~"||trim(cpt1);
      cpt_flag=0;
      cpt_count+1;
   end;
   drop i cpt_flag;
run;
data fb_ipanc_k_part3;
   set fb_ipanc_k_part3;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   num_elements=count(cpt_list,"~")+1;
   if last.dos;
   keep scrssn sta3n ven13n paycat dos num_elements cpt_list;
run;
data fb_ipanc_k_part3;
   set fb_ipanc_k_part3;
   length cpt $5;
   do i=1 to num_elements;
      cpt=scan(cpt_list,i,"~");
      output;
   end;
run;
proc transpose data=fb_ipanc_k_part3
               out =fb_ipanc_k_part3 (drop=_name_)
               prefix=cpt_
   ;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   var cpt;
run;

*************************************************************************;

* combine;
data fb_ipanc_k;
   merge  fb_ipanc_k_part2
          fb_ipanc_k_part3
          fb_ipanc_k_part1
   ;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   format amount dollar10.2;
   amount=round(amount,0.01);
   rename ip_ancil_recs=recs;
   label dx_1  ="Dx 1"
         dx_2  ="Dx 2"
         dx_3  ="Dx 3"
         dx_4  ="Dx 4"
         dx_5  ="Dx 5"
         dx_6  ="Dx 6"

         cpt_1 ="CPT 1"
         cpt_2 ="CPT 2"
```

```
        cpt_3 ="CPT 3"
        cpt_4 ="CPT 4"
        cpt_5 ="CPT 5"
        cpt_6 ="CPT 6"
        cpt_7 ="CPT 7"
        cpt_8 ="CPT 8"
        cpt_9 ="CPT 9"
        cpt_10="CPT 10"
        cpt_11="CPT 11"
        cpt_12="CPT 12"
        cpt_13="CPT 13"
        cpt_14="CPT 14"
        cpt_15="CPT 15"
        cpt_16="CPT 16"
        cpt_17="CPT 17"
        cpt_18="CPT 18"
        cpt_19="CPT 19"
        cpt_20="CPT 20"
        cpt_21="CPT 21"
        cpt_22="CPT 22"
        cpt_23="CPT 23"
        cpt_24="CPT 24"
        cpt_25="CPT 25"
        cpt_26="CPT 26"
        cpt_27="CPT 27"
        cpt_28="CPT 28"

        ip_ancil_recs="# Records"
        dos          ="Date of Service"
   ;
run;

*************************************************************************;
* 3. OP  (MED)                                                          ;
*************************************************************************;

* use TREATDT as DOS;
data fb_med_a;
   length DXLSF $6.;
   set &fbmed_00_10
       &fbmed_11
       &fbmed_12
       &fbmed_13
       &fbmed_14

   ;
   format dos date9.;
   dos=mdy(input(substr(treatdt,1,2),2.0),
           input(substr(treatdt,3,2),2.0),
           input(substr(treatdt,5,4),4.0)
          );
run;
/*
NOTE: There were 69525 observations read from the data set TODDW._FB_MED00_10.
NOTE: There were 14520 observations read from the data set TODDW._FB_MED11.
NOTE: There were 13892 observations read from the data set TODDW._FB_MED12.
NOTE: There were 15714 observations read from the data set TODDW._FB_MED13.
NOTE: There were 16295 observations read from the data set TODDW._FB_MED14.
NOTE: The data set WORK.FB_MED_A has 129946 observations and 80 variables.
*/

proc sql;
   create table fb_med_b as
   select a.*,
          b.start,
          b.end,
          b.randate
   from fb_med_a as a,
        index as b
   where a.scrssn eq b.scrssn
   order by scrssn,
```

```
           dos
   ;
quit;

data fb_med_c      (drop=start end randate dt)
     fb_med_c_xtra (drop=start end randate dt)
   ;
   set fb_med_b;
   format dt date9.;
   if not missing(start)       then dt=start;
      else if not missing(end) then dt=end;
      else                          dt=randate;
   if dos ge dt then output fb_med_c;
      else           output fb_med_c_xtra;
run;
/*
NOTE: There were 129946 observations read from the data set WORK.FB_MED_B.
NOTE: The data set WORK.FB_MED_C has 116598 observations and 80 variables.
NOTE: The data set WORK.FB_MED_C_XTRA has 13348 observations and 80 variables.
*/

proc sort data=fb_med_c;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
      lineno
   ;
run;

*************************************************************************;

* COST 1st;
proc summary data=fb_med_c nway missing;
   class scrssn
         sta3n
         ven13n
         paycat
         dos
   ;
   var amount;
   output out=fb_med_d_part1 (drop=_type_ rename=(_freq_=recs)) sum=;
run;

* DXLSF 2nd -- NO REPEAT OF DX;
data fb_med_d_part2;
   set fb_med_c;
   if dxlsf ne "";
run;
data fb_med_d_part2;
   set  fb_med_d_part2;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   retain dx_list
          dx_flag
          dx_count
   ;
   length dx_list $200;        /*** ADJ THIS AS NECESSARY ***/
   if first.dos then do;
      dx_list =trim(dxlsf);
      dx_flag =0;
      dx_count=1;
   end;
   else do;
      do i=1 to dx_count;
         if dxlsf eq scan(dx_list,i,"~") then dx_flag=1;
```

```
      end;
      if dx_flag eq 0 then dx_list=trim(dx_list)||"~"||trim(dxlsf);
      dx_flag=0;
      dx_count+1;
   end;
   drop i dx_flag;
run;
data fb_med_d_part2;
   set fb_med_d_part2;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   num_elements=count(dx_list,"~")+1;
   if last.dos;
   keep scrssn sta3n ven13n paycat dos num_elements dx_list;
run;
data fb_med_d_part2;
   set fb_med_d_part2;
   length dx $5;
   do i=1 to num_elements;
      dx=scan(dx_list,i,"~");
      output;
   end;
run;
proc transpose data=fb_med_d_part2
               out =fb_med_d_part2 (drop=_name_)
               prefix=dx_
   ;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   var dx;
run;

* CPT1 3rd -- NO REPEAT OF CPT;
data fb_med_d_part3;
   set fb_med_c;
   if cpt1 ne "";
run;
data fb_med_d_part3;
   set  fb_med_d_part3;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   retain cpt_list
          cpt_flag
          cpt_count
   ;
   length cpt_list $300;        /*** ADJ THIS AS NECESSARY ***/
   if first.dos then do;
      cpt_list =trim(cpt1);
      cpt_flag =0;
      cpt_count=1;
   end;
   else do;
      do i=1 to cpt_count;
         if cpt1 eq scan(cpt_list,i,"~") then cpt_flag=1;
      end;
      if cpt_flag eq 0 then cpt_list=trim(cpt_list)||"~"||trim(cpt1);
      cpt_flag=0;
      cpt_count+1;
   end;
```

```
   drop i cpt_flag;
run;
data fb_med_d_part3;
   set fb_med_d_part3;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   num_elements=count(cpt_list,"~")+1;
   if last.dos;
   keep scrssn sta3n ven13n paycat dos num_elements cpt_list;
run;
data fb_med_d_part3;
   set fb_med_d_part3;
   length cpt $5;
   do i=1 to num_elements;
      cpt=scan(cpt_list,i,"~");
      output;
   end;
run;
proc transpose data=fb_med_d_part3
               out =fb_med_d_part3 (drop=_name_)
               prefix=cpt_
   ;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   var cpt;
run;

*****************************************************************************;

* combine;
data fb_med_d;
   merge  fb_med_d_part2
          fb_med_d_part3
          fb_med_d_part1
   ;
   by scrssn
      sta3n
      ven13n
      paycat
      dos
   ;
   format amount dollar10.2;
   amount=round(amount,0.01);
   label dx_1="Dx 1"
         dx_2="Dx 2"
         dx_3="Dx 3"
         dx_4="Dx 4"
         dx_5="Dx 5"
         dx_6="Dx 6"
         dx_7="Dx 7"
         dx_8="Dx 8"
         dx_9="Dx 9"

         cpt_1 ="CPT 1"
         cpt_2 ="CPT 2"
         cpt_3 ="CPT 3"
         cpt_4 ="CPT 4"
         cpt_5 ="CPT 5"
         cpt_6 ="CPT 6"
         cpt_7 ="CPT 7"
         cpt_8 ="CPT 8"
         cpt_9 ="CPT 9"
         cpt_10="CPT 10"
```

```
         cpt_11="CPT 11"
         cpt_12="CPT 12"
         cpt_13="CPT 13"
         cpt_14="CPT 14"
         cpt_15="CPT 15"
         cpt_16="CPT 16"
         cpt_17="CPT 17"
         cpt_18="CPT 18"
         cpt_19="CPT 19"
         cpt_20="CPT 20"
         cpt_21="CPT 21"
         cpt_22="CPT 22"
         cpt_23="CPT 23"
         cpt_24="CPT 24"
         cpt_25="CPT 25"
         cpt_26="CPT 26"
         cpt_27="CPT 27"
         cpt_28="CPT 28"
         cpt_29="CPT 29"
         cpt_30="CPT 30"
         cpt_31="CPT 31"
         cpt_32="CPT 32"
         cpt_33="CPT 33"
         cpt_34="CPT 34"
         cpt_35="CPT 35"
         cpt_36="CPT 36"
         cpt_37="CPT 37"
         cpt_38="CPT 38"
         cpt_39="CPT 39"
         cpt_40="CPT 40"

         recs="# Records"
         dos ="Date of Service"
   ;
run;

*************************************************************************;
* 3. output the STAYS file and VISITS file                               ;
*************************************************************************;

data &outf1 (label="&lbl1" compress=yes);
   merge fb_ip_g
         fb_ipanc_i
   ;
   by admitid;
   format total_amount dollar10.2;
   total_amount=sum(of amount, ip_ancil_amount);
   if missing(ip_ancil_recs)   then ip_ancil_recs   = 0;
   if missing(ip_ancil_amount) then ip_ancil_amount = 0;
   label total_amount="TOTAL Payment Amount";
   drop admitid;
run;
/*
NOTE: There were 998 observations read from the data set WORK.FB_IP_G.
NOTE: There were 762 observations read from the data set WORK.FB_IPANC_I.
NOTE: The data set TODDW3.ADAMC_FB_STAYS_TO_FY14 has 998 observations and 160 variables.
*/

data fb_visits;
   format adamc_src;
   set fb_med_d    (in=in1)
       fb_ipanc_k  (in=in2)
   ;
   length adamc_src $20;
   if         in1 then adamc_src="MED";
      else if in2 then adamc_src="IP Ancillary";
   label adamc_src="Source";
run;
/*
NOTE: There were 65348 observations read from the data set WORK.FB_MED_D.
NOTE: There were 1297 observations read from the data set WORK.FB_IPANC_K.
```

```
NOTE: The data set WORK.FB_VISITS has 66645 observations and 57 variables.
*/

proc sort data=fb_visits;
   by scrssn
      dos
      descending adamc_src
   ;
run;

data &outf2 (label="lbl2" compress=yes);
   set fb_visits;
run;
/*
NOTE: The data set TODDW3.ADAMC_FB_VISITS_TO_FY14 has 66645 observations and 57 variables.
NOTE: Compressing data set TODDW3.ADAMC_FB_VISITS_TO_FY14 decreased size by 73.88 percent.
*/

*************************************************************************;
* 4A. PROC CONTENTS and MEANS of FEE BASIS STAYS                         ;
*************************************************************************;

* check missing;
*%include "/export/home/achow/code/chk_missing.sas";
%include "./chk_missing.sas";

%chk_missing(indsn =&outf1 /* Input SAS dataset name  */,
             outdsn=a     /* Output SAS dataset name */
            );

proc print data=a noobs label uniform;
    title1 "CSP517 -- Check Missing Values -- Fee Basis IP Stays Data Set -- Index Thru FY14";
    title2 " ";
    format NOBS comma8.
           miss_pct percent10.3
    ;
run; title;

proc contents data=&outf1 varnum;
    title1 "CSP517 -- PROC CONTENTS -- Fee Basis IP Stays Data Set -- Index Thru FY14";
run; title;

options formdlim="*";
proc means data=&outf1 n nmiss sum min median mean max;
    title1 "CSP517 -- PROC MEANS -- Fee Basis IP Stays Data Set -- Index Thru FY14";
run; title;
options formdlim="";

*************************************************************************;
* 4B. PROC CONTENTS and MEANS of FEE BASIS VISITS                        ;
*************************************************************************;

%chk_missing(indsn =&outf2 /* Input SAS dataset name  */,
             outdsn=b     /* Output SAS dataset name */
            );

proc print data=b noobs label uniform;
    title1 "CSP517 -- Check Missing Values -- Fee Basis OP Visits Data Set -- Index Thru FY14";
    format NOBS comma8.
           miss_pct percent10.3
    ;
run; title;

proc contents data=&outf2 varnum;
    title1 "CSP517 -- PROC CONTENTS -- Fee Basis OP Visits Data Set -- Index Thru FY14";
run; title;

proc means data=&outf2 n nmiss sum min median mean max;
    title1 "CSP517 -- PROC MEANS -- Fee Basis OP Visits Data Set -- Index Thru FY14";
run; title;
```

```
*************************************************************************;

proc summary data=&outf2 missing;
   class adamc_src;
   var amount;
   output out=b1 (rename=(_freq_=visits)) sum=;
run;

data b1;
   format adamc_src visits pct1 amount;
   set b1 (where=(_type_=1));
   if _n_=1 then set b1 (where=(_type_=0) rename=(visits=vtot amount=atot) drop=adamc_src);
   format visits comma10.
          amount dollar15.2
          pct1
          pct2 percent8.1
   ;
   pct1=visits/vtot;
   pct2=amount/atot;
   label visits="# Visits"
         pct1  ="|--pct-|"
         pct2  ="|--pct-|"
   ;
   drop _TYPE_ vtot atot;
run;

options formdlim="*";
proc print data=b1 noobs label double;
   title1 "CSP517 -- Utilization/Cost Summary -- Fee Basis OP Visits Data Set -- Index Thru
FY14";
   sum _numeric_;
run; title;
options formdlim="";

*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********31h_process_rx_fy14.sas**********
*************************************************************************;
* Name: /export/data/csp517/csp517/31h_process_rx_fy14.sas               ;
*                                                                        ;
* Description:  process Rx data thru FY14                                ;
*                                                                        ;
* Input: toddw2.analy_cabg_30may2014  (use to identify INDEX stay)       ;
*                                                                        ;
*        toddw._ph_rxo02_10                                              ;
*        toddw._ph_rxo11                                                 ;
*        toddw._ph_rxo12                                                 ;
*        toddw._ph_rxo13                                                 ;
*        toddw._ph_rxo14     <<<>>>                                      ;
*                                                                        ;
* Output: toddw2.adamc_rx_02_14                                          ;
*                                                                        ;
* Ext.Macros: No                                                         ;
*                                                                        ;
* Run Under:  SAS 9.2 for Unix                                           ;
*                                                                        ;
* Date      Author    Modification History                               ;
* ---------------------------------------------------------------------;
* 14MAY14   AdamC                                                        ;
* 15SEP15   Howard Jiang  Modified prog 29h                              ;
*************************************************************************;

options ps=70 ls=170 nodate nocenter nosymbolgen nomprint;

libname toddw   "/export/data/csp517/csp517/datasets";
libname toddw2  "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw3  "/export/data/csp517/csp517/datasets/analy_w_fy14";
libname library "/static/data/sasfmt/ptffmt";

%let index = toddw2.analy_cabg_30may2014;  /*** OLD Analysis File ***/
```

```
%let rx_02_10 =toddw._ph_rxo02_10;
%let rx_11    =toddw._ph_rxo11;
%let rx_12    =toddw._ph_rxo12;
%let rx_13    =toddw._ph_rxo13;
%let rx_14    =toddw._ph_rxo14;

%let outf = toddw3.adamc_rx_02_14;              /*** OUTPUT DATASET ***/
%let lbl  = DSS Rx Scripts From Index to FY14;  /*** Permanent Data Set Label ***/

*************************************************************************;
* 01.  ... use admitday or disday or randate to filter                  ;
*************************************************************************;

data index;
   format idx_admitday
          idx_disday date9.
   ;
   set &index;
   format start
          end date9.
   ;
   start=idx_admitday;
   end  =idx_disday;
   rename idx_admitday=admitday
          idx_disday  =disday
   ;
   keep scrssn idx_admitday idx_disday randate start end;
run;
/*
NOTE: There were 2200 observations read from the data set TODDW2.ANALY_CABG_30MAY2014.
NOTE: The data set WORK.INDEX has 2200 observations and 6 variables.
*/

*************************************************************************;
* 02. DSS outpatient                                                    ;
*************************************************************************;

* 5/14/2014 -- added DROP MPI options otherwise ERROR MSG: both numeric and character;
data rx_a;
   set &rx_02_10
       &rx_11    (drop=mpi)
       &rx_12    (drop=mpi)
       &rx_13    (drop=mpi)
       &rx_14    (drop=mpi)
   ;
   format vizday_ date9.;
   vizday_=svc_dte;
   drop vizday;
run;

* filter out records before index stay;
proc sql;
   create table rx_b as
   select a.*,
          b.start,
          b.end,
          b.randate
   from rx_a as a
       left join
        index as b
   on a.scrssn eq b.scrssn
   order by scrssn,
            vizday_,
            clstop
   ;
quit;

data rx_c       (rename=(vizday_=vizday))
     rx_c_extra (rename=(vizday_=vizday))
   ;
```

```
   set rx_b;
   format dt date9.;
   if         not missing(start) then dt=start;
      else if not missing(end)   then dt=end;
      else                            dt=randate;
   if vizday_ ge dt then output rx_c;
      else              output rx_c_extra;
run;

/*
NOTE: There were 1153893 observations read from the data set WORK.RX_B.
NOTE: The data set WORK.RX_C has 955859 observations and 62 variables.
NOTE: The data set WORK.RX_C_EXTRA has 198034 observations and 62 variables.
*/

data rx_d;
   format scrssn randate start end vizday;
   set rx_c;
   if va_class="ZZ999" then va_class="";
   if act_cost ge 0;                /*** FILTER 1 (returns) ***/
   if dispcost ge 0;
run;

/*
NOTE: There were 955859 observations read from the data set WORK.RX_C.
NOTE: The data set WORK.RX_D has 953102 observations and 62 variables.
*/

data rx_d_chk;
   set rx_c;
   if dispcost lt 0;
run;

*************************************************************************;
* 03. summarize and output                                              ;
*************************************************************************;

proc summary data=rx_d nway missing;
   class scrssn vizday va_class;
   var act_cost dispcost;
   output out=rx_e (drop=_type_ rename=(_freq_=scripts)) sum=;
run;

data &outf (label="&lbl");;
   set rx_e;
   format tot_cost dollar8.2;
   tot_cost=round(sum(act_cost, dispcost),0.01);

   if  tot_cost  > 0;      /*** FILTER ***/
   drop act_cost dispcost;
   label scripts ="# Scripts"
         tot_cost="Total Rx Cost"
   ;
run;

/*
NOTE: There were 914783 observations read from the data set WORK.RX_E.
NOTE: The data set TODDW3.ADAMC_RX_02_14 has 912752 observations and 5 variables.
*/

************************************************************************;

proc contents data=&outf varnum;
    title1 "CSP517 -- PROC CONTENTS -- Scripts Data Set -- Index Thru FY14";
run; title;

options formdlim="*";
proc means data=&outf n nmiss min mean median max;
    title1 "CSP517 -- PROC MEANS -- Scripts Data Set -- Index Thru FY14";
run;
options formdlim="";
```

```
*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;

/*
proc summary data=&outf nway missing;
   class va_class;
   var tot_cost;
   output out=ck_ (drop=_type_ _freq_) n     =N
                                       nmiss =NMISS
                                       min   =MIN
                                       p1    =P1
                                       p5    =P5
                                       p10   =P10
                                       p25   =P25
                                       mean  =MEAN
                                       median=MEDIAN
                                       p75   =P75
                                       p90   =P90
                                       p95   =P95
                                       p99   =P99
                                       max   =MAX
                                       stddev=STDDEV
   ;
   attrib _all_ label="";
   format tot_cost dollar10.;
run;
*/
**********31h_process_rx_fy14.sas**********
*************************************************************************;
* Name: /export/data/csp517/csp517/31h_process_rx_fy14.sas               ;
*                                                                        ;
* Description:  process Rx data thru FY14                                ;
*                                                                        ;
* Input: toddw2.analy_cabg_30may2014  (use to identify INDEX stay)       ;
*                                                                        ;
*        toddw._ph_rxo02_10                                              ;
*        toddw._ph_rxo11                                                 ;
*        toddw._ph_rxo12                                                 ;
*        toddw._ph_rxo13                                                 ;
*        toddw._ph_rxo14     <<<>>>                                      ;
*                                                                        ;
* Output: toddw2.adamc_rx_02_14                                          ;
*                                                                        ;
* Ext.Macros: No                                                         ;
*                                                                        ;
* Run Under:  SAS 9.2 for Unix                                           ;
*                                                                        ;
* Date      Author    Modification History                               ;
* ---------------------------------------------------------------------;
* 14MAY14   AdamC                                                        ;
* 15SEP15   Howard Jiang  Modified prog 29h                              ;
*************************************************************************;

options ps=70 ls=170 nodate nocenter nosymbolgen nomprint;

libname toddw   "/export/data/csp517/csp517/datasets";
libname toddw2  "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw3  "/export/data/csp517/csp517/datasets/analy_w_fy14";
libname library "/static/data/sasfmt/ptffmt";

%let index = toddw2.analy_cabg_30may2014;  /*** OLD Analysis File ***/

%let rx_02_10 =toddw._ph_rxo02_10;
%let rx_11    =toddw._ph_rxo11;
%let rx_12    =toddw._ph_rxo12;
%let rx_13    =toddw._ph_rxo13;
%let rx_14    =toddw._ph_rxo14;
```

```
%let outf = toddw3.adamc_rx_02_14;              /*** OUTPUT DATASET ***/
%let lbl  = DSS Rx Scripts From Index to FY14;  /*** Permanent Data Set Label ***/

*************************************************************************;
* 01.  ... use admitday or disday or randate to filter                  ;
*************************************************************************;

data index;
   format idx_admitday
          idx_disday date9.
   ;
   set &index;
   format start
          end date9.
   ;
   start=idx_admitday;
   end  =idx_disday;
   rename idx_admitday=admitday
          idx_disday  =disday
   ;
   keep scrssn idx_admitday idx_disday randate start end;
run;
/*
NOTE: There were 2200 observations read from the data set TODDW2.ANALY_CABG_30MAY2014.
NOTE: The data set WORK.INDEX has 2200 observations and 6 variables.
*/

*************************************************************************;
* 02. DSS outpatient                                                    ;
*************************************************************************;

* 5/14/2014 -- added DROP MPI options otherwise ERROR MSG: both numeric and character;
data rx_a;
   set &rx_02_10
       &rx_11    (drop=mpi)
       &rx_12    (drop=mpi)
       &rx_13    (drop=mpi)
       &rx_14    (drop=mpi)
   ;
   format vizday_ date9.;
   vizday_=svc_dte;
   drop vizday;
run;

* filter out records before index stay;
proc sql;
   create table rx_b as
   select a.*,
          b.start,
          b.end,
          b.randate
   from rx_a as a
       left join
        index as b
   on a.scrssn eq b.scrssn
   order by scrssn,
            vizday_,
            clstop
   ;
quit;

data rx_c       (rename=(vizday_=vizday))
     rx_c_extra (rename=(vizday_=vizday))
   ;
   set rx_b;
   format dt date9.;
   if         not missing(start) then dt=start;
      else if not missing(end)   then dt=end;
      else                            dt=randate;
   if vizday_ ge dt then output rx_c;
      else               output rx_c_extra;
```

```
run;

/*
NOTE: There were 1153893 observations read from the data set WORK.RX_B.
NOTE: The data set WORK.RX_C has 955859 observations and 62 variables.
NOTE: The data set WORK.RX_C_EXTRA has 198034 observations and 62 variables.
*/

data rx_d;
   format scrssn randate start end vizday;
   set rx_c;
   if va_class="ZZ999" then va_class="";
   if act_cost ge 0;                /*** FILTER 1 (returns) ***/
   if dispcost ge 0;
run;

/*
NOTE: There were 955859 observations read from the data set WORK.RX_C.
NOTE: The data set WORK.RX_D has 953102 observations and 62 variables.
*/

data rx_d_chk;
   set rx_c;
   if dispcost lt 0;
run;

*************************************************************************;
* 03. summarize and output                                              ;
*************************************************************************;

proc summary data=rx_d nway missing;
   class scrssn vizday va_class;
   var act_cost dispcost;
   output out=rx_e (drop=_type_ rename=(_freq_=scripts)) sum=;
run;

data &outf (label="&lbl");;
   set rx_e;
   format tot_cost dollar8.2;
   tot_cost=round(sum(act_cost, dispcost),0.01);

   if  tot_cost  > 0;      /*** FILTER ***/
   drop act_cost dispcost;
   label scripts ="# Scripts"
         tot_cost="Total Rx Cost"
   ;
run;

/*
NOTE: There were 914783 observations read from the data set WORK.RX_E.
NOTE: The data set TODDW3.ADAMC_RX_02_14 has 912752 observations and 5 variables.
*/

************************************************************************;

proc contents data=&outf varnum;
    title1 "CSP517 -- PROC CONTENTS -- Scripts Data Set -- Index Thru FY14";
run; title;

options formdlim="*";
proc means data=&outf n nmiss min mean median max;
    title1 "CSP517 -- PROC MEANS -- Scripts Data Set -- Index Thru FY14";
run;
options formdlim="";


************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
************************************************************************;

/*
```

```
proc summary data=&outf nway missing;
   class va_class;
   var tot_cost;
   output out=ck_ (drop=_type_ _freq_) n     =N
                                       nmiss =NMISS
                                       min   =MIN
                                       p1    =P1
                                       p5    =P5
                                       p10   =P10
                                       p25   =P25
                                       mean  =MEAN
                                       median=MEDIAN
                                       p75   =P75
                                       p90   =P90
                                       p95   =P95
                                       p99   =P99
                                       max   =MAX
                                       stddev=STDDEV
   ;
   attrib _all_ label="";
   format tot_cost dollar10.;
run;
*/
**********31i_sum_fb_fy14.sas**********
*********************************************************************;
* Name: /export/data/avgcost/csp517/31i_sum_fb_fy14.sas               ;
*                                                                     ;
* Description: make patient level Fee Basis data set, data thru FY14  ;
*                                                                     ;
* Input: toddw2.analy_cabg_30may2014      (OLD analysis data set)     ;
*                                                                     ;
*        toddw3.adamc_deaths_fixed_fy14   (created in Prog 31c)       ;
*        toddw3.adamc_yr_frame_to_fy14    (created in Prog 31c)       ;
*        toddw3.adamc_fb_stays_to_fy14    (created in Prog 31g)       ;
*        toddw3.adamc_fb_visits_to_fy14   (created in Prog 31g)       ;
*                                                                     ;
* Output: toddw3.analy_fb_patlev_to_fy14  (the OUTPUT Dsn)            ;
*                                                                     ;
* Ext.Macros: Yes -- inflation adjustment macro -- ADJ_COST14         ;
*             Yes -- check missing macro -- CHK_MISSING               ;
*                                                                     ;
* Run Under:  SAS 9.2 for Unix                                        ;
*                                                                     ;
* Date      Author    Modification History                            ;
* ------------------------------------------------------------------;
* 14MAY14   AdamC                                                     ;
* 16SEP15   Howard Jiang  Modified prog 29i                           ;
*********************************************************************;

* INFLATION ADJUSTMENT MACRO;
%include "/export/data/csp517/csp517/programs/00_inflation_factors_cpi.sas";

options ps=70 ls=160 nodate nosymbolgen nomprint;

libname toddw   "/export/data/csp517/csp517/datasets";
libname toddw2  "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw3  "/export/data/csp517/csp517/datasets/analy_w_fy14";
libname library "/static/data/sasfmt/ptffmt";

* %let cutoff = "30SEP2013"d;                  /*** FY13 Cutoff ***/

%let index = toddw2.analy_cabg_30may2014;     /*** OLD Analysis File ***/
%let death = toddw3.adamc_deaths_fixed_fy14;  /*** Deaths created in Prog 31c    ***/
%let frame = toddw3.adamc_yr_frame_to_fy14;   /*** Framework created in Prog 31c ***/

%let fbip  = toddw3.adamc_fb_stays_to_fy14;   /*** created in Prog 31g ***/
%let fbop  = toddw3.adamc_fb_visits_to_fy14;  /*** created in Prog 31g ***/

%let outf = toddw3.analy_fb_patlev_to_fy14;                         /*** Permanent Data Set
Name  ***/
```

```
%let lbl  = CSP 517 (Person Level) Fee Basis -- Cost Adj. to 2014 $; /*** Permanent Data Set
Label ***/

*************************************************************************;
* 00. the base ... INDEX and 365 days post randomization                 ;
*     per prog 23g, death dates are OK ... no issues                     ;
*************************************************************************;

data index1;
   format idx_pre_surg_days
          idx_cost_adj
   ;
   set &index;
   keep onpump scrssn center randate;
run;

data index2;
   merge index1
         &death (keep=scrssn dod_baseline dod_adamc dod_curr_vital);
   by scrssn;
   label dod_curr_vital="Date of Death 12/31/2014 Vital Mini";      /*** chg as needed ***/
run;
/*
NOTE: There were 2200 observations read from the data set WORK.INDEX1.
NOTE: There were 2200 observations read from the data set TODDW3.ADAMC_DEATHS_FIXED_FY14.
*/

*************************************************************************;
* 01. get the cohort that has YEAR 1 going forward                       ;
*************************************************************************;

data frame;
   set &frame;
   if year ge 1;

   days=intck("day",start, stop)+1;
run;

data xframe;
   set frame;
   format dos mmddyy10.;
   do i=1 to days;
      dos=intnx("day",start, i-1);
      output;
   end;
   drop i days;
run;

*************************************************************************;
* 02. process Fee Basis IP and expand to DOS                             ;
*************************************************************************;

data xip_1;
   set &fbip;
   perdiem=round(total_amount/days,0.01);
run;
/*
NOTE: There were 998 observations read from the data set TODDW3.ADAMC_FB_STAYS_TO_FY14.
NOTE: The data set WORK.XIP_1 has 998 observations and 161 variables.
*/

data xip_2;
   set xip_1;
   format dos mmddyy10.;
   do i=1 to days;
      dos=intnx("day",admitday, i-1);
      days=1;
      output;
   end;
run;
```

```
proc summary data=xip_2 nway missing;
   class scrssn dos;
   var perdiem days;
   output out=xip_3 (drop=_type_ _freq_) sum=;
run;
/* EXPECT NO CHANGE --- DOS NOT UNIQUE
NOTE: There were 11595 observations read from the data set WORK.XIP_2.
NOTE: The data set WORK.XIP_3 has 11450 observations and 4 variables.
*/

* INFLATION ADJUSTMENT;
data xip_3;
   set xip_3;

  * THIS IS USED TO CHECK;
   old_cost=perdiem;

   %adj_cost14(dos, perdiem);         /*** adj to CAY 2014 dollars ***/
   perdiem=round(perdiem,0.01);
run;

* NOT SURPRISE IF THERE IS SOMETHING IN XFRAME1_XTRA;
data xframe1
     xframe1_xtra
   ;
   merge xframe (in=in1)
         xip_3  (in=in2)
   ;
   by scrssn dos;
   if in1 and in2 then output xframe1;
      else if in1 then output xframe1;
      else if in2 then output xframe1_xtra;
run;

data xframe2;
   set xframe1;
   if missing(perdiem) then perdiem=0;
   if missing(days)    then days   =0;
   format perdiem dollar10.2
          days    comma8.
   ;
run;

proc summary data=xframe2 nway missing;
   class scrssn year;
   var days perdiem;
   output out=xframe3  (drop=_type_ _freq_) sum=;
run;

proc transpose data  =xframe3
               out   =xframe3_days (drop=_name_ _label_)
               prefix=fb_ip_days_yr_;
   ;
   by scrssn;
   id year;
   var days;
run;
proc transpose data=xframe3
               out =xframe3_cost (drop=_name_)
               prefix=fb_ip_cost_yr_;
   ;
   by scrssn;
   id year;
   var perdiem;
run;

data component_ip;
   format scrssn
          fb_ip_days_yr_1   fb_ip_cost_yr_1
          fb_ip_days_yr_2   fb_ip_cost_yr_2
          fb_ip_days_yr_3   fb_ip_cost_yr_3
```

```
          fb_ip_days_yr_4   fb_ip_cost_yr_4
          fb_ip_days_yr_5   fb_ip_cost_yr_5
          fb_ip_days_yr_6   fb_ip_cost_yr_6
          fb_ip_days_yr_7   fb_ip_cost_yr_7
          fb_ip_days_yr_8   fb_ip_cost_yr_8
          fb_ip_days_yr_9   fb_ip_cost_yr_9
          fb_ip_days_yr_10  fb_ip_cost_yr_10
          fb_ip_days_yr_11  fb_ip_cost_yr_11
          fb_ip_days_yr_12  fb_ip_cost_yr_12
          fb_ip_days_yr_13  fb_ip_cost_yr_13
   ;
   merge xframe3_cost
         xframe3_days
   ;
   by scrssn;
run;

*************************************************************************;
* 03. process OP                                                        ;
*************************************************************************;

data xop_1;
   set &fbop;

 * THIS IS USED TO CHECK;
   old_cost=amount;

   %adj_cost14(dos, amount);      /*** adj to CAY 2014 dollars ***/
   amount=round(amount,0.01);
run;

proc summary data=xop_1 nway missing;
   class scrssn sta3n ven13n paycat dos;
   var amount;
   output out=xop_2 (drop=_type_ rename=(_freq_=visits)) sum=;
run;
/*
NOTE: There were 66645 observations read from the data set WORK.XOP_1.
NOTE: The data set WORK.XOP_2 has 66645 observations and 7 variables.
*/

proc summary data=xop_2 nway missing;
   class scrssn dos;
   var visits amount;
   output out=xop_3 (drop=_type_ _freq_) sum=;
run;

* expect nothing go to XFRAME4_XTRA;
data xframe4
     xframe4_xtra
   ;
   merge xframe (in=in1)
         xop_3  (in=in2)
   ;
   by scrssn dos;
   if in1 and in2 then output xframe4;
      else if in1 then output xframe4;
      else if in2 then output xframe4_xtra;
run;
/*
NOTE: There were 6778050 observations read from the data set WORK.XFRAME.
NOTE: There were 60095 observations read from the data set WORK.XOP_3.
NOTE: The data set WORK.XFRAME4 has 6778050 observations and 12 variables.
NOTE: The data set WORK.XFRAME4_XTRA has 2987 observations and 12 variables.
*/

data xframe5;
   set xframe4;
   if missing(amount) then amount=0;
   if missing(visits) then visits=0;
   format amount dollar10.2
```

```
          visits comma8.
   ;
run;

proc summary data=xframe5 nway missing;
   class scrssn year;
   var visits amount;
   output out=xframe6  (drop=_type_ _freq_) sum=;
run;

proc transpose data  =xframe6
               out   =xframe6_visits (drop=_name_)
               prefix=fb_op_visits_yr_;
   ;
   by scrssn;
   id year;
   var visits;
run;
proc transpose data=xframe6
               out =xframe6_cost (drop=_name_ _label_)
               prefix=fb_op_cost_yr_;
   ;
   by scrssn;
   id year;
   var amount;
run;

data component_op;
   format scrssn
          fb_op_visits_yr_1   fb_op_cost_yr_1
          fb_op_visits_yr_2   fb_op_cost_yr_2
          fb_op_visits_yr_3   fb_op_cost_yr_3
          fb_op_visits_yr_4   fb_op_cost_yr_4
          fb_op_visits_yr_5   fb_op_cost_yr_5
          fb_op_visits_yr_6   fb_op_cost_yr_6
          fb_op_visits_yr_7   fb_op_cost_yr_7
          fb_op_visits_yr_8   fb_op_cost_yr_8
          fb_op_visits_yr_9   fb_op_cost_yr_9
          fb_op_visits_yr_10  fb_op_cost_yr_10
          fb_op_visits_yr_11  fb_op_cost_yr_11
          fb_op_visits_yr_12  fb_op_cost_yr_12
          fb_op_visits_yr_13  fb_op_cost_yr_13
   ;
   merge xframe6_cost
         xframe6_visits
   ;
   by scrssn;
run;

*************************************************************************;
* 04. put the 2 pieces together                                         ;
*************************************************************************;

data c1;
   format
      scrssn
      fb_ip_days_yr_1  fb_ip_cost_yr_1  fb_op_visits_yr_1  fb_op_cost_yr_1  fb_tot_cost_yr_1
      fb_ip_days_yr_2  fb_ip_cost_yr_2  fb_op_visits_yr_2  fb_op_cost_yr_2  fb_tot_cost_yr_2
      fb_ip_days_yr_3  fb_ip_cost_yr_3  fb_op_visits_yr_3  fb_op_cost_yr_3  fb_tot_cost_yr_3
      fb_ip_days_yr_4  fb_ip_cost_yr_4  fb_op_visits_yr_4  fb_op_cost_yr_4  fb_tot_cost_yr_4
      fb_ip_days_yr_5  fb_ip_cost_yr_5  fb_op_visits_yr_5  fb_op_cost_yr_5  fb_tot_cost_yr_5
      fb_ip_days_yr_6  fb_ip_cost_yr_6  fb_op_visits_yr_6  fb_op_cost_yr_6  fb_tot_cost_yr_6
      fb_ip_days_yr_7  fb_ip_cost_yr_7  fb_op_visits_yr_7  fb_op_cost_yr_7  fb_tot_cost_yr_7
      fb_ip_days_yr_8  fb_ip_cost_yr_8  fb_op_visits_yr_8  fb_op_cost_yr_8  fb_tot_cost_yr_8
      fb_ip_days_yr_9  fb_ip_cost_yr_9  fb_op_visits_yr_9  fb_op_cost_yr_9  fb_tot_cost_yr_9
      fb_ip_days_yr_10 fb_ip_cost_yr_10 fb_op_visits_yr_10 fb_op_cost_yr_10 fb_tot_cost_yr_10
      fb_ip_days_yr_11 fb_ip_cost_yr_11 fb_op_visits_yr_11 fb_op_cost_yr_11 fb_tot_cost_yr_11
      fb_ip_days_yr_12 fb_ip_cost_yr_12 fb_op_visits_yr_12 fb_op_cost_yr_12 fb_tot_cost_yr_12
      fb_ip_days_yr_13 fb_ip_cost_yr_13 fb_op_visits_yr_13 fb_op_cost_yr_13 fb_tot_cost_yr_13
   ;
   merge component_ip
```

```
         component_op
   ;
   by scrssn;

   format fb_tot_cost_yr_: dollar12.2;

  * IF IP_COST_YEAR_X IS FILLED THEN SO IS OP_COST_YEAR_X;
   if not missing(fb_ip_cost_yr_1)  then fb_tot_cost_yr_1 =sum(fb_ip_cost_yr_1,  fb_op_cost_yr_1
);
   if not missing(fb_ip_cost_yr_2)  then fb_tot_cost_yr_2 =sum(fb_ip_cost_yr_2,  fb_op_cost_yr_2
);
   if not missing(fb_ip_cost_yr_3)  then fb_tot_cost_yr_3 =sum(fb_ip_cost_yr_3,  fb_op_cost_yr_3
);
   if not missing(fb_ip_cost_yr_4)  then fb_tot_cost_yr_4 =sum(fb_ip_cost_yr_4,  fb_op_cost_yr_4
);
   if not missing(fb_ip_cost_yr_5)  then fb_tot_cost_yr_5 =sum(fb_ip_cost_yr_5,  fb_op_cost_yr_5
);
   if not missing(fb_ip_cost_yr_6)  then fb_tot_cost_yr_6 =sum(fb_ip_cost_yr_6,  fb_op_cost_yr_6
);
   if not missing(fb_ip_cost_yr_7)  then fb_tot_cost_yr_7 =sum(fb_ip_cost_yr_7,  fb_op_cost_yr_7
);
   if not missing(fb_ip_cost_yr_8)  then fb_tot_cost_yr_8 =sum(fb_ip_cost_yr_8,  fb_op_cost_yr_8
);
   if not missing(fb_ip_cost_yr_9)  then fb_tot_cost_yr_9 =sum(fb_ip_cost_yr_9,  fb_op_cost_yr_9
);
   if not missing(fb_ip_cost_yr_10) then fb_tot_cost_yr_10=sum(fb_ip_cost_yr_10,
fb_op_cost_yr_10);
   if not missing(fb_ip_cost_yr_11) then fb_tot_cost_yr_11=sum(fb_ip_cost_yr_11,
fb_op_cost_yr_11);
   if not missing(fb_ip_cost_yr_12) then fb_tot_cost_yr_12=sum(fb_ip_cost_yr_12,
fb_op_cost_yr_12);
   if not missing(fb_ip_cost_yr_13) then fb_tot_cost_yr_13=sum(fb_ip_cost_yr_13,
fb_op_cost_yr_13);
run;

data c2;
   set c1;
   label fb_ip_days_yr_1    ="PostRand IP Days Year1 (FeeBasis)"
         fb_ip_cost_yr_1    ="PostRand IP Cost Year1 (FeeBasis)"
         fb_op_visits_yr_1  ="PostRand OP Visits Year1 (FeeBasis)"
         fb_op_cost_yr_1    ="PostRand OP Cost Year1 (FeeBasis)"
         fb_tot_cost_yr_1   ="PostRand TOTAL Cost Year1 (FeeBasis)"

         fb_ip_days_yr_2    ="PostRand IP Days Year2 (FeeBasis)"
         fb_ip_cost_yr_2    ="PostRand IP Cost Year2 (FeeBasis)"
         fb_op_visits_yr_2  ="PostRand OP Visits Year2 (FeeBasis)"
         fb_op_cost_yr_2    ="PostRand OP Cost Year2 (FeeBasis)"
         fb_tot_cost_yr_2   ="PostRand TOTAL Cost Year2 (FeeBasis)"

         fb_ip_days_yr_3    ="PostRand IP Days Year3 (FeeBasis)"
         fb_ip_cost_yr_3    ="PostRand IP Cost Year3 (FeeBasis)"
         fb_op_visits_yr_3  ="PostRand OP Visits Year3 (FeeBasis)"
         fb_op_cost_yr_3    ="PostRand OP Cost Year3 (FeeBasis)"
         fb_tot_cost_yr_3   ="PostRand TOTAL Cost Year3 (FeeBasis)"

         fb_ip_days_yr_4    ="PostRand IP Days Year4 (FeeBasis)"
         fb_ip_cost_yr_4    ="PostRand IP Cost Year4 (FeeBasis)"
         fb_op_visits_yr_4  ="PostRand OP Visits Year4 (FeeBasis)"
         fb_op_cost_yr_4    ="PostRand OP Cost Year4 (FeeBasis)"
         fb_tot_cost_yr_4   ="PostRand TOTAL Cost Year4 (FeeBasis)"

         fb_ip_days_yr_5    ="PostRand IP Days Year5 (FeeBasis)"
         fb_ip_cost_yr_5    ="PostRand IP Cost Year5 (FeeBasis)"
         fb_op_visits_yr_5  ="PostRand OP Visits Year5 (FeeBasis)"
         fb_op_cost_yr_5    ="PostRand OP Cost Year5 (FeeBasis)"
         fb_tot_cost_yr_5   ="PostRand TOTAL Cost Year5 (FeeBasis)"

         fb_ip_days_yr_6    ="PostRand IP Days Year6 (FeeBasis)"
         fb_ip_cost_yr_6    ="PostRand IP Cost Year6 (FeeBasis)"
         fb_op_visits_yr_6  ="PostRand OP Visits Year6 (FeeBasis)"
         fb_op_cost_yr_6    ="PostRand OP Cost Year6 (FeeBasis)"
```

```
         fb_tot_cost_yr_6   ="PostRand TOTAL Cost Year6 (FeeBasis)"

         fb_ip_days_yr_7    ="PostRand IP Days Year7 (FeeBasis)"
         fb_ip_cost_yr_7    ="PostRand IP Cost Year7 (FeeBasis)"
         fb_op_visits_yr_7  ="PostRand OP Visits Year7 (FeeBasis)"
         fb_op_cost_yr_7    ="PostRand OP Cost Year7 (FeeBasis)"
         fb_tot_cost_yr_7   ="PostRand TOTAL Cost Year7 (FeeBasis)"

         fb_ip_days_yr_8    ="PostRand IP Days Year8 (FeeBasis)"
         fb_ip_cost_yr_8    ="PostRand IP Cost Year8 (FeeBasis)"
         fb_op_visits_yr_8  ="PostRand OP Visits Year8 (FeeBasis)"
         fb_op_cost_yr_8    ="PostRand OP Cost Year8 (FeeBasis)"
         fb_tot_cost_yr_8   ="PostRand TOTAL Cost Year8 (FeeBasis)"

         fb_ip_days_yr_9    ="PostRand IP Days Year9 (FeeBasis)"
         fb_ip_cost_yr_9    ="PostRand IP Cost Year9 (FeeBasis)"
         fb_op_visits_yr_9  ="PostRand OP Visits Year9 (FeeBasis)"
         fb_op_cost_yr_9    ="PostRand OP Cost Year9 (FeeBasis)"
         fb_tot_cost_yr_9   ="PostRand TOTAL Cost Year9 (FeeBasis)"

         fb_ip_days_yr_10   ="PostRand IP Days Year10 (FeeBasis)"
         fb_ip_cost_yr_10   ="PostRand IP Cost Year10 (FeeBasis)"
         fb_op_visits_yr_10 ="PostRand OP Visits Year10 (FeeBasis)"
         fb_op_cost_yr_10   ="PostRand OP Cost Year10 (FeeBasis)"
         fb_tot_cost_yr_10  ="PostRand TOTAL Cost Year10 (FeeBasis)"

         fb_ip_days_yr_11   ="PostRand IP Days Year11 (FeeBasis)"
         fb_ip_cost_yr_11   ="PostRand IP Cost Year11 (FeeBasis)"
         fb_op_visits_yr_11 ="PostRand OP Visits Year11 (FeeBasis)"
         fb_op_cost_yr_11   ="PostRand OP Cost Year11 (FeeBasis)"
         fb_tot_cost_yr_11  ="PostRand TOTAL Cost Year11 (FeeBasis)"

         fb_ip_days_yr_12   ="PostRand IP Days Year12 (FeeBasis)"
         fb_ip_cost_yr_12   ="PostRand IP Cost Year12 (FeeBasis)"
         fb_op_visits_yr_12 ="PostRand OP Visits Year12 (FeeBasis)"
         fb_op_cost_yr_12   ="PostRand OP Cost Year12 (FeeBasis)"
         fb_tot_cost_yr_12  ="PostRand TOTAL Cost Year12 (FeeBasis)"

         fb_ip_days_yr_13   ="PostRand IP Days Year13 (FeeBasis)"
         fb_ip_cost_yr_13   ="PostRand IP Cost Year13 (FeeBasis)"
         fb_op_visits_yr_13 ="PostRand OP Visits Year13 (FeeBasis)"
         fb_op_cost_yr_13   ="PostRand OP Cost Year13 (FeeBasis)"
         fb_tot_cost_yr_13  ="PostRand TOTAL Cost Year13 (FeeBasis)"

   ;
run;

data &outf (label="&lbl");
   merge index2
         c2
   ;
   by scrssn;
run;

proc contents data=&outf varnum;
   title1 "CSP517 -- PROC CONTENTS of Dataset &outf -- FeeBasis Analysis Dataset";
   title2 "Note1: All Costs are in 2014 $";
   title3 "Note2: Data to FY14, up to 13 full periods for those who died (full period is 365
days)";
run; title;

proc means data=&outf n nmiss sum min mean max stddev;
   title1 "CSP517 -- PROC MEANS of Dataset &outf -- FeeBasis Analysis Dataset";
   title2 "Note1: All Costs are in 2014 $";
   title3 "Note2: Data to FY14, up to 13 full periods for those who died (full period is 365
days)";
run; title;

*************************************************************************;
* check missing;
```

```
*%include "/export/home/achow/code/chk_missing.sas";
%include "./chk_missing.sas";

%chk_missing(indsn =&outf /* Input SAS dataset name  */,
             outdsn=a     /* Output SAS dataset name */
            );

proc print data=a noobs label;
    title1 "CSP517 -- Check Missing Values -- Fee Basis Analysis Data Set (Patient Level) --
Index Thru FY14";
    format NOBS comma8.
           miss_pct percent8.1
    ;
run; title;

*************************************************************************;
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********31j_mk_analy_fy14.sas**********
*************************************************************************;
* Name: /export/data/csp517/csp517/programs/31j_mk_analy_fy14.sas         ;
*                                                                         ;
* Description: make patient level data set to incl FY14 data              ;
*                                                                         ;
* Input: toddw2.analy_cabg_30may2014       (the old analysis data set)    ;
*                                                                         ;
*        toddw3.adamc_deaths_fixed_fy14    (created in Prog 31c)          ;
*        toddw3.adamc_yr_frame_to_fy14     (created in Prog 31c)          ;
*                                                                         ;
*        toddw3.adamc_disch_to_fy14        (created in Prog 31d)          ;
*        toddw3.adamc_op_visits_to_fy14    (created in Prog 31f)          ;
*        toddw3.adamc_rx_02_14             (created in Prog 31h)          ;
*                                                                         ;
* Output: toddw3.analy_cabg_22sep2015                                     ;
*                                                                         ;
* Ext.Macros: Yes -- inflation adjustment macro -- ADJ_COST14             ;
*             Yes -- check missing macro -- CHK_MISSING                   ;
*                                                                         ;
* Run Under:  SAS 9.2 for Unix                                            ;
*                                                                         ;
* Date      Author    Modification History                                ;
* ------------------------------------------------------------------------;
* 27MAY14   AdamC                                                         ;
* 21SEP15   Howard Jiang Modified prog 29j                                ;
*************************************************************************;

* INFLATION ADJUSTMENT MACRO;
%include "/export/data/csp517/csp517/programs/00_inflation_factors_cpi.sas";

options ps=70 ls=170 nodate nocenter nosymbolgen nomprint;

libname toddw   "/export/data/csp517/csp517/datasets";
libname toddw2  "/export/data/csp517/csp517/datasets/analy_w_fy13";
libname toddw3  "/export/data/csp517/csp517/datasets/analy_w_fy14";
libname library "/static/data/sasfmt/ptffmt";

%let index = toddw2.analy_cabg_30may2014;      /*** the LAST Analysis File        ***/
%let death = toddw3.adamc_deaths_fixed_fy14;  /*** Deaths created in Prog 31c    ***/
%let frame = toddw3.adamc_yr_frame_to_fy14;  /*** Framework created in Prog 31c ***/

%let ip = toddw3.adamc_disch_to_fy14;      /*** created in Prog 31d ***/
%let op = toddw3.adamc_op_visits_to_fy14; /*** created in Prog 31f ***/
%let rx = toddw3.adamc_rx_02_14;         /*** created in Prog 31h ***/

%let outf = toddw3.analy_cabg_22sep2015;                                /*** Permanent Data Set
Name  ***/
%let lbl  = CSP 517 (Person Level) Incl Year2+ -- Cost Adj. to 2014 $; /*** Permanent Data Set
Label ***/

*************************************************************************;
* 00. the base ... INDEX and 365 days post randomization                 ;
```

```
*     per prog 23g, death dates are OK ... no issues                        ;
*************************************************************************;

* this produces data set ADAMC_START in WORK -- starting point;
* the index and post 365 days costs are all adjusted to FY14 dollars;
*%include "/export/data/csp517/csp517/programs/00_idx_p365_cost_util_fy13.sas";
%include "/export/data/csp517/csp517/programs/00_idx_p365_cost_util_fy14.sas";

data index1_;
   set ADAMC_START;
   drop dod_baseline dod_vital;
run;
/*
NOTE: There were 2200 observations read from the data set WORK.ADAMC_START.
NOTE: The data set WORK.INDEX1_ has 2200 observations and 65 variables.
*/

data index1__;
   format idx_pre_surg_days
          idx_cost_adj
   ;
   set &index;
   keep scrssn idx_pre_surg_days idx_cost_adj;
run;
/*
NOTE: There were 2200 observations read from the data set TODDW2.ANALY_CABG_30MAY2014.
NOTE: The data set WORK.INDEX1__ has 2200 observations and 3 variables.
*/

data index1;
   merge index1_
         index1__
   ;
   by scrssn;
run;

data index2;
   merge index1
         &death (keep=scrssn dod_baseline dod_adamc dod_curr_vital);
   by scrssn;
   label dod_curr_vital="Date of Death 12/31/2014 Vital Mini";      /*** NEED TO CHG ***/
run;
/*
NOTE: There were 2200 observations read from the data set WORK.INDEX1.
NOTE: There were 2200 observations read from the data set TODDW3.ADAMC_DEATHS_FIXED_FY14.
NOTE: The data set WORK.INDEX2 has 2200 observations and 70 variables.
*/

*************************************************************************;
* 01. get the cohort that has YEAR 2 or more and expand to DOS           ;
*************************************************************************;

data frame;
   set &frame;
   if year ge 2;    /*** FILTER: INDEX and Year 1 already done, in ADAMC_START ***/

   days=intck("day",start, stop)+1;
run;
/*
NOTE: There were 18571 observations read from the data set TODDW3.ADAMC_YR_FRAME_TO_FY14.
NOTE: The data set WORK.FRAME has 16371 observations and 10 variables.
*/

data xframe;
   set frame;
   format dos mmddyy10.;
   do i=1 to days;
      dos=intnx("day",start, i-1);
      output;
   end;
   drop i days;
```

```
run;
/*
NOTE: There were 16371 observations read from the data set WORK.FRAME.
NOTE: The data set WORK.XFRAME has 5975415 observations and 10 variables.
*/

*************************************************************************;
* 02. process IP and expand to DOS                                      ;
*************************************************************************;

* check the type of admits;
proc summary data=&ip nway missing;
   class adamc_src;
   output out=chk_ip_1;
run;

* should get  7894 * 397 = 8291 per CHK_IP_1;
data xip_1;
   set &ip;
   if adamc_src=:"DISCH";
run;
/*
NOTE: There were 10442 observations read from the data set TODDW3.ADAMC_DISCH_TO_FY14.
NOTE: The data set WORK.XIP_1 has 9337 observations and 43 variables.
*/

* drop 1 case -- this is a XM stay;
data xip_1;
   set xip_1;
   if dcst_tot > 0;
run;
/*
NOTE: There were 9337 observations read from the data set WORK.XIP_1.
NOTE: The data set WORK.XIP_1 has 9336 observations and 43 variables.
*/

* index stay is not part of year2+ so remove ... around 2,194 less;
data xip_1;
   set xip_1;
   if ind_idx_stay=0;
run;
/*
NOTE: There were 9336 observations read from the data set WORK.XIP_1.
NOTE: The data set WORK.XIP_1 has 7143 observations and 43 variables.
*/
data xip_1;
   set xip_1;
   perdiem=round(dcst_tot/dss_days,0.01);
run;

/* check
proc means data=xip_1 n nmiss min mean median max;
   var perdiem;
run;
*/

data xip_2;
   set xip_1;
   format dos mmddyy10.;
   do i=1 to dss_days;
      dos=intnx("day",admitday, i-1);
      days=1;
      output;
   end;
run;

proc summary data=xip_2 nway missing;
   class scrssn dos;
   var perdiem days;
   output out=xip_3 (drop=_type_ _freq_) sum=;
run;
```

```
/* EXPECT NO CHANGE --- DOS NOT UNIQUE
NOTE: There were 63031 observations read from the data set WORK.XIP_2.
NOTE: The data set WORK.XIP_3 has 61886 observations and 4 variables.
*/

* see why DOS is not inique for patient -- this is due to XM, keep for now;
proc sort data= xip_2
          out = chk_ip_2;
   by scrssn dos;
run;
data chk_ip_2;
   set chk_ip_2;
   by scrssn dos;
   if not (first.dos and last.dos);
run;

* INFLATION ADJUSTMENT;
data xip_3;
   set xip_3;

  * THIS IS USED TO CHECK;
   old_cost=perdiem;

   %adj_cost14(dos, perdiem);
   perdiem=round(perdiem,0.01);
run;

* NOT SURPRISE IF THERE IS SOMETHING IN XFRAME1_XTRA;
data xframe1
     xframe1_xtra
   ;
   merge xframe (in=in1)
         xip_3  (in=in2)
   ;
   by scrssn dos;
   if in1 and in2 then output xframe1;
      else if in1 then output xframe1;
      else if in2 then output xframe1_xtra;
run;

data xframe2;
   set xframe1;
   if missing(perdiem) then perdiem=0;
   if missing(days)    then days   =0;
   format perdiem dollar10.2
          days    comma8.
   ;
run;

proc summary data=xframe2 nway missing;
   class scrssn year;
   var days perdiem;
   output out=xframe3  (drop=_type_ _freq_) sum=;
run;

proc transpose data  =xframe3
               out   =xframe3_days (drop=_name_)
               prefix=ip_days_year_;
   ;
   by scrssn;
   id year;
   var days;
run;
proc transpose data=xframe3
               out =xframe3_cost (drop=_name_)
               prefix=ip_cost_year_;
   ;
   by scrssn;
   id year;
   var perdiem;
run;
```

```
data component_ip;
   format scrssn
          ip_days_year_2   ip_cost_year_2
          ip_days_year_3   ip_cost_year_3
          ip_days_year_4   ip_cost_year_4
          ip_days_year_5   ip_cost_year_5
          ip_days_year_6   ip_cost_year_6
          ip_days_year_7   ip_cost_year_7
          ip_days_year_8   ip_cost_year_8
          ip_days_year_9   ip_cost_year_9
          ip_days_year_10  ip_cost_year_10
          ip_days_year_11  ip_cost_year_11
          ip_days_year_12  ip_cost_year_12
          ip_days_year_13  ip_cost_year_13
   ;
   merge xframe3_cost
         xframe3_days
   ;
   by scrssn;
run;

*************************************************************************;
* 03. process OP                                                        ;
*************************************************************************;

* check the type of admits;
proc summary data=&op nway missing;
   class adamc_src;
   output out=chk_op_1;
run;

* should get 73399 + 504108 = 577507 per CHK_OP_1;
data xop_1;
   set &op;
   if adamc_src=:"DSS";
run;
/*
NOTE: There were 633342 observations read from the data set TODDW3.ADAMC_OP_VISITS_TO_FY14.
NOTE: The data set WORK.XOP_1 has 628448 observations and 65 variables.
*/

* must have cost > 0;
data xop_1;
   set xop_1;
   if ocst_tot > 0;
run;
/*
NOTE: There were 628448 observations read from the data set WORK.XOP_1.
NOTE: The data set WORK.XOP_1 has 583665 observations and 65 variables.
*/

/* check
proc means data=xop_1 n nmiss min mean median max;
   var ocst_tot;
run;
*/

data xop_1;
   set xop_1;
   format dos mmddyy10.;

 * THIS IS USED TO CHECK;
   old_cost=ocst_tot;

   %adj_cost14(VIZDAY, ocst_tot);
   ocst_tot=round(ocst_tot,0.01);
   dos = VIZDAY;
run;

proc summary data=xop_1 nway missing;
```

```
   class scrssn dos clstop;
   var ocst_tot;
   output out=xop_2 (drop=_type_ rename=(_freq_=visits)) sum=;
run;
/*
NOTE: There were 583665 observations read from the data set WORK.XOP_1.
NOTE: The data set WORK.XOP_2 has 583665 observations and 5 variables.
*/

proc summary data=xop_2 nway missing;
   class scrssn dos;
   var visits ocst_tot;
   output out=xop_3 (drop=_type_ _freq_) sum=;
run;

data xframe4
     xframe4_xtra
   ;
   merge xframe (in=in1)
         xop_3  (in=in2)
   ;
   by scrssn dos;
   if in1 and in2 then output xframe4;
      else if in1 then output xframe4;
      else if in2 then output xframe4_xtra;
run;
/*
NOTE: There were 5975415 observations read from the data set WORK.XFRAME.
NOTE: There were 395267 observations read from the data set WORK.XOP_3.
NOTE: The data set WORK.XFRAME4 has 5975415 observations and 12 variables.
NOTE: The data set WORK.XFRAME4_XTRA has 72247 observations and 12 variables.
*/

data xframe5;
   set xframe4;
   if missing(ocst_tot) then ocst_tot=0;
   if missing(visits)   then visits  =0;
   format ocst_tot dollar10.2
          visits   comma8.
   ;
run;

proc summary data=xframe5 nway missing;
   class scrssn year;
   var visits ocst_tot;
   output out=xframe6  (drop=_type_ _freq_) sum=;
run;

proc transpose data  =xframe6
               out   =xframe6_visits (drop=_name_)
               prefix=op_visits_year_;
   ;
   by scrssn;
   id year;
   var visits;
run;
proc transpose data=xframe6
               out =xframe6_cost (drop=_name_ _label_)
               prefix=op_cost_year_;
   ;
   by scrssn;
   id year;
   var ocst_tot;
run;

data component_op;
   format scrssn
          op_visits_year_2   op_cost_year_2
          op_visits_year_3   op_cost_year_3
          op_visits_year_4   op_cost_year_4
          op_visits_year_5   op_cost_year_5
```

```
          op_visits_year_6   op_cost_year_6
          op_visits_year_7   op_cost_year_7
          op_visits_year_8   op_cost_year_8
          op_visits_year_9   op_cost_year_9
          op_visits_year_10  op_cost_year_10
          op_visits_year_11  op_cost_year_11
          op_visits_year_12  op_cost_year_12
          op_visits_year_13  op_cost_year_13

   ;
   merge xframe6_cost
         xframe6_visits
   ;
   by scrssn;
run;

*************************************************************************;
* 04. process Rx                                                        ;
*************************************************************************;

data xrx_1;
   set &rx;
   format dos mmddyy10.;

 * THIS IS USED TO CHECK;
   old_cost=tot_cost;

   %adj_cost14(VIZDAY, tot_cost);
   tot_cost=round(tot_cost,0.01);
   dos = VIZDAY;
run;
/*
NOTE: There were 912752 observations read from the data set TODDW3.ADAMC_RX_02_14.
NOTE: The data set WORK.XRX_1 has 912752 observations and 7 variables.
*/

proc summary data=xrx_1 nway missing;
   class scrssn dos;
   var scripts tot_cost;
   output out=xrx_2 (drop=_type_ _freq_) sum=;
run;

data xframe7
     xframe7_xtra
   ;
   merge xframe (in=in1)
         xrx_2  (in=in2)
   ;
   by scrssn dos;
   if in1 and in2 then output xframe7;
      else if in1 then output xframe7;
      else if in2 then output xframe7_xtra;
run;
/*
NOTE: There were 5975415 observations read from the data set WORK.XFRAME.
NOTE: There were 494270 observations read from the data set WORK.XRX_2.
NOTE: The data set WORK.XFRAME7 has 5975415 observations and 12 variables.
NOTE: The data set WORK.XFRAME7_XTRA has 75394 observations and 12 variables.
*/

data xframe8;
   set xframe7;
   if missing(tot_cost) then tot_cost=0;
   if missing(scripts)  then scripts =0;
   format tot_cost dollar10.2;
run;

proc summary data=xframe8 nway missing;
   class scrssn year;
   var scripts tot_cost;
   output out=xframe9  (drop=_type_ _freq_) sum=;
```

```
run;

proc transpose data=xframe9
               out =xframe9_scripts (drop=_name_ _label_)
               prefix=rx_scripts_year_;
   ;
   by scrssn;
   id year;
   var scripts;
run;
proc transpose data=xframe9
               out =xframe9_cost (drop=_name_ _label_)
               prefix=rx_cost_year_;
   ;
   by scrssn;
   id year;
   var tot_cost;
run;

data component_rx;
   format scrssn
          rx_scripts_year_2   rx_cost_year_2
          rx_scripts_year_3   rx_cost_year_3
          rx_scripts_year_4   rx_cost_year_4
          rx_scripts_year_5   rx_cost_year_5
          rx_scripts_year_6   rx_cost_year_6
          rx_scripts_year_7   rx_cost_year_7
          rx_scripts_year_8   rx_cost_year_8
          rx_scripts_year_9   rx_cost_year_9
          rx_scripts_year_10  rx_cost_year_10
          rx_scripts_year_11  rx_cost_year_11
          rx_scripts_year_12  rx_cost_year_12
          rx_scripts_year_13  rx_cost_year_13

   ;
   merge xframe9_cost
         xframe9_scripts
   ;
   by scrssn;
run;

*************************************************************************;
* 05. put the 3 components together                                     ;
*************************************************************************;

data year2plus_a;
   format
      scrssn
      ip_days_year_2  ip_cost_year_2  op_visits_year_2  op_cost_year_2  rx_scripts_year_2
rx_cost_year_2  tot_cost_year_2
      ip_days_year_3  ip_cost_year_3  op_visits_year_3  op_cost_year_3  rx_scripts_year_3
rx_cost_year_3  tot_cost_year_3
      ip_days_year_4  ip_cost_year_4  op_visits_year_4  op_cost_year_4  rx_scripts_year_4
rx_cost_year_4  tot_cost_year_4
      ip_days_year_5  ip_cost_year_5  op_visits_year_5  op_cost_year_5  rx_scripts_year_5
rx_cost_year_5  tot_cost_year_5
      ip_days_year_6  ip_cost_year_6  op_visits_year_6  op_cost_year_6  rx_scripts_year_6
rx_cost_year_6  tot_cost_year_6
      ip_days_year_7  ip_cost_year_7  op_visits_year_7  op_cost_year_7  rx_scripts_year_7
rx_cost_year_7  tot_cost_year_7
      ip_days_year_8  ip_cost_year_8  op_visits_year_8  op_cost_year_8  rx_scripts_year_8
rx_cost_year_8  tot_cost_year_8
      ip_days_year_9  ip_cost_year_9  op_visits_year_9  op_cost_year_9  rx_scripts_year_9
rx_cost_year_9  tot_cost_year_9
      ip_days_year_10 ip_cost_year_10 op_visits_year_10 op_cost_year_10 rx_scripts_year_10
rx_cost_year_10 tot_cost_year_10
      ip_days_year_11 ip_cost_year_11 op_visits_year_11 op_cost_year_11 rx_scripts_year_11
rx_cost_year_11 tot_cost_year_11
      ip_days_year_12 ip_cost_year_12 op_visits_year_12 op_cost_year_12 rx_scripts_year_12
rx_cost_year_12 tot_cost_year_12
```

```
      ip_days_year_13 ip_cost_year_13 op_visits_year_13 op_cost_year_13 rx_scripts_year_13
rx_cost_year_13 tot_cost_year_13

   ;
   merge component_ip
         component_op
         component_rx
   ;
   by scrssn;

   format tot_cost_year_: dollar12.2;

  * IF IP_COST_YEAR_X IS FILLED THEN SO IS OP_COST_YEAR_X AND RX_COST_YEAR;
   if not missing(ip_cost_year_2)  then tot_cost_year_2 =sum(ip_cost_year_2,  op_cost_year_2,
rx_cost_year_2);
   if not missing(ip_cost_year_3)  then tot_cost_year_3 =sum(ip_cost_year_3,  op_cost_year_3,
rx_cost_year_3);
   if not missing(ip_cost_year_4)  then tot_cost_year_4 =sum(ip_cost_year_4,  op_cost_year_4,
rx_cost_year_4);
   if not missing(ip_cost_year_5)  then tot_cost_year_5 =sum(ip_cost_year_5,  op_cost_year_5,
rx_cost_year_5);
   if not missing(ip_cost_year_6)  then tot_cost_year_6 =sum(ip_cost_year_6,  op_cost_year_6,
rx_cost_year_6);
   if not missing(ip_cost_year_7)  then tot_cost_year_7 =sum(ip_cost_year_7,  op_cost_year_7,
rx_cost_year_7);
   if not missing(ip_cost_year_8)  then tot_cost_year_8 =sum(ip_cost_year_8,  op_cost_year_8,
rx_cost_year_8);
   if not missing(ip_cost_year_9)  then tot_cost_year_9 =sum(ip_cost_year_9,  op_cost_year_9,
rx_cost_year_9);
   if not missing(ip_cost_year_10) then tot_cost_year_10=sum(ip_cost_year_10, op_cost_year_10,
rx_cost_year_10);
   if not missing(ip_cost_year_11) then tot_cost_year_11=sum(ip_cost_year_11, op_cost_year_11,
rx_cost_year_11);
   if not missing(ip_cost_year_12) then tot_cost_year_12=sum(ip_cost_year_12, op_cost_year_12,
rx_cost_year_12);
   if not missing(ip_cost_year_13) then tot_cost_year_13=sum(ip_cost_year_13, op_cost_year_13,
rx_cost_year_13);

run;

data year2plus_b;
   set year2plus_a;
   rename ip_days_year_2    = prand_ip_days_yr2
          ip_cost_year_2    = prand_ip_cost_yr2
          op_visits_year_2  = prand_op_visits_yr2
          op_cost_year_2    = prand_op_cost_yr2
          rx_scripts_year_2 = prand_rx_scripts_yr2
          rx_cost_year_2    = prand_rx_cost_yr2
          tot_cost_year_2   = prand_tot_cost_yr2

          ip_days_year_3    = prand_ip_days_yr3
          ip_cost_year_3    = prand_ip_cost_yr3
          op_visits_year_3  = prand_op_visits_yr3
          op_cost_year_3    = prand_op_cost_yr3
          rx_scripts_year_3 = prand_rx_scripts_yr3
          rx_cost_year_3    = prand_rx_cost_yr3
          tot_cost_year_3   = prand_tot_cost_yr3

          ip_days_year_4    = prand_ip_days_yr4
          ip_cost_year_4    = prand_ip_cost_yr4
          op_visits_year_4  = prand_op_visits_yr4
          op_cost_year_4    = prand_op_cost_yr4
          rx_scripts_year_4 = prand_rx_scripts_yr4
          rx_cost_year_4    = prand_rx_cost_yr4
          tot_cost_year_4   = prand_tot_cost_yr4

          ip_days_year_5    = prand_ip_days_yr5
          ip_cost_year_5    = prand_ip_cost_yr5
          op_visits_year_5  = prand_op_visits_yr5
          op_cost_year_5    = prand_op_cost_yr5
          rx_scripts_year_5 = prand_rx_scripts_yr5
```

```
        rx_cost_year_5    = prand_rx_cost_yr5
        tot_cost_year_5   = prand_tot_cost_yr5

        ip_days_year_6    = prand_ip_days_yr6
        ip_cost_year_6    = prand_ip_cost_yr6
        op_visits_year_6  = prand_op_visits_yr6
        op_cost_year_6    = prand_op_cost_yr6
        rx_scripts_year_6 = prand_rx_scripts_yr6
        rx_cost_year_6    = prand_rx_cost_yr6
        tot_cost_year_6   = prand_tot_cost_yr6

        ip_days_year_7    = prand_ip_days_yr7
        ip_cost_year_7    = prand_ip_cost_yr7
        op_visits_year_7  = prand_op_visits_yr7
        op_cost_year_7    = prand_op_cost_yr7
        rx_scripts_year_7 = prand_rx_scripts_yr7
        rx_cost_year_7    = prand_rx_cost_yr7
        tot_cost_year_7   = prand_tot_cost_yr7

        ip_days_year_8    = prand_ip_days_yr8
        ip_cost_year_8    = prand_ip_cost_yr8
        op_visits_year_8  = prand_op_visits_yr8
        op_cost_year_8    = prand_op_cost_yr8
        rx_scripts_year_8 = prand_rx_scripts_yr8
        rx_cost_year_8    = prand_rx_cost_yr8
        tot_cost_year_8   = prand_tot_cost_yr8

        ip_days_year_9    = prand_ip_days_yr9
        ip_cost_year_9    = prand_ip_cost_yr9
        op_visits_year_9  = prand_op_visits_yr9
        op_cost_year_9    = prand_op_cost_yr9
        rx_scripts_year_9 = prand_rx_scripts_yr9
        rx_cost_year_9    = prand_rx_cost_yr9
        tot_cost_year_9   = prand_tot_cost_yr9

        ip_days_year_10   = prand_ip_days_yr10
        ip_cost_year_10   = prand_ip_cost_yr10
        op_visits_year_10 = prand_op_visits_yr10
        op_cost_year_10   = prand_op_cost_yr10
        rx_scripts_year_10= prand_rx_scripts_yr10
        rx_cost_year_10   = prand_rx_cost_yr10
        tot_cost_year_10  = prand_tot_cost_yr10

        ip_days_year_11   = prand_ip_days_yr11
        ip_cost_year_11   = prand_ip_cost_yr11
        op_visits_year_11 = prand_op_visits_yr11
        op_cost_year_11   = prand_op_cost_yr11
        rx_scripts_year_11= prand_rx_scripts_yr11
        rx_cost_year_11   = prand_rx_cost_yr11
        tot_cost_year_11  = prand_tot_cost_yr11

        ip_days_year_12   = prand_ip_days_yr12
        ip_cost_year_12   = prand_ip_cost_yr12
        op_visits_year_12 = prand_op_visits_yr12
        op_cost_year_12   = prand_op_cost_yr12
        rx_scripts_year_12= prand_rx_scripts_yr12
        rx_cost_year_12   = prand_rx_cost_yr12
        tot_cost_year_12  = prand_tot_cost_yr12

        ip_days_year_13   = prand_ip_days_yr13
        ip_cost_year_13   = prand_ip_cost_yr13
        op_visits_year_13 = prand_op_visits_yr13
        op_cost_year_13   = prand_op_cost_yr13
        rx_scripts_year_13= prand_rx_scripts_yr13
        rx_cost_year_13   = prand_rx_cost_yr13
        tot_cost_year_13  = prand_tot_cost_yr13

;
label ip_days_year_2    ="PostRand IP Days Year2 (DSS)"
      ip_cost_year_2    ="PostRand IP Cost Year2 (DSS)"
      op_visits_year_2  ="PostRand OP Visits Year2 (DSS)"
```

```
op_cost_year_2    ="PostRand OP Cost Year2 (DSS)"
rx_scripts_year_2 ="PostRand RX Scripts Year2 (DSS)"
rx_cost_year_2    ="PostRand RX Cost Year2 (DSS)"
tot_cost_year_2   ="PostRand TOTAL Cost Year2 (DSS)"

ip_days_year_3    ="PostRand IP Days Year3 (DSS)"
ip_cost_year_3    ="PostRand IP Cost Year3 (DSS)"
op_visits_year_3  ="PostRand OP Visits Year3 (DSS)"
op_cost_year_3    ="PostRand OP Cost Year3 (DSS)"
rx_scripts_year_3 ="PostRand RX Scripts Year3 (DSS)"
rx_cost_year_3    ="PostRand RX Cost Year3 (DSS)"
tot_cost_year_3   ="PostRand TOTAL Cost Year3 (DSS)"

ip_days_year_4    ="PostRand IP Days Year4 (DSS)"
ip_cost_year_4    ="PostRand IP Cost Year4 (DSS)"
op_visits_year_4  ="PostRand OP Visits Year4 (DSS)"
op_cost_year_4    ="PostRand OP Cost Year4 (DSS)"
rx_scripts_year_4 ="PostRand RX Scripts Year4 (DSS)"
rx_cost_year_4    ="PostRand RX Cost Year4 (DSS)"
tot_cost_year_4   ="PostRand TOTAL Cost Year4 (DSS)"

ip_days_year_5    ="PostRand IP Days Year5 (DSS)"
ip_cost_year_5    ="PostRand IP Cost Year5 (DSS)"
op_visits_year_5  ="PostRand OP Visits Year5 (DSS)"
op_cost_year_5    ="PostRand OP Cost Year5 (DSS)"
rx_scripts_year_5 ="PostRand RX Scripts Year5 (DSS)"
rx_cost_year_5    ="PostRand RX Cost Year5 (DSS)"
tot_cost_year_5   ="PostRand TOTAL Cost Year5 (DSS)"

ip_days_year_6    ="PostRand IP Days Year6 (DSS)"
ip_cost_year_6    ="PostRand IP Cost Year6 (DSS)"
op_visits_year_6  ="PostRand OP Visits Year6 (DSS)"
op_cost_year_6    ="PostRand OP Cost Year6 (DSS)"
rx_scripts_year_6 ="PostRand RX Scripts Year6 (DSS)"
rx_cost_year_6    ="PostRand RX Cost Year6 (DSS)"
tot_cost_year_6   ="PostRand TOTAL Cost Year6 (DSS)"

ip_days_year_7    ="PostRand IP Days Year7 (DSS)"
ip_cost_year_7    ="PostRand IP Cost Year7 (DSS)"
op_visits_year_7  ="PostRand OP Visits Year7 (DSS)"
op_cost_year_7    ="PostRand OP Cost Year7 (DSS)"
rx_scripts_year_7 ="PostRand RX Scripts Year7 (DSS)"
rx_cost_year_7    ="PostRand RX Cost Year7 (DSS)"
tot_cost_year_7   ="PostRand TOTAL Cost Year7 (DSS)"

ip_days_year_8    ="PostRand IP Days Year8 (DSS)"
ip_cost_year_8    ="PostRand IP Cost Year8 (DSS)"
op_visits_year_8  ="PostRand OP Visits Year8 (DSS)"
op_cost_year_8    ="PostRand OP Cost Year8 (DSS)"
rx_scripts_year_8 ="PostRand RX Scripts Year8 (DSS)"
rx_cost_year_8    ="PostRand RX Cost Year8 (DSS)"
tot_cost_year_8   ="PostRand TOTAL Cost Year8 (DSS)"

ip_days_year_9    ="PostRand IP Days Year9 (DSS)"
ip_cost_year_9    ="PostRand IP Cost Year9 (DSS)"
op_visits_year_9  ="PostRand OP Visits Year9 (DSS)"
op_cost_year_9    ="PostRand OP Cost Year9 (DSS)"
rx_scripts_year_9 ="PostRand RX Scripts Year9 (DSS)"
rx_cost_year_9    ="PostRand RX Cost Year9 (DSS)"
tot_cost_year_9   ="PostRand TOTAL Cost Year9 (DSS)"

ip_days_year_10   ="PostRand IP Days Year10 (DSS)"
ip_cost_year_10   ="PostRand IP Cost Year10 (DSS)"
op_visits_year_10 ="PostRand OP Visits Year10 (DSS)"
op_cost_year_10   ="PostRand OP Cost Year10 (DSS)"
rx_scripts_year_10="PostRand RX Scripts Year10 (DSS)"
rx_cost_year_10   ="PostRand RX Cost Year10 (DSS)"
tot_cost_year_10  ="PostRand TOTAL Cost Year10 (DSS)"

ip_days_year_11   ="PostRand IP Days Year11 (DSS)"
ip_cost_year_11   ="PostRand IP Cost Year11 (DSS)"
```

```
         op_visits_year_11 ="PostRand OP Visits Year11 (DSS)"
         op_cost_year_11   ="PostRand OP Cost Year11 (DSS)"
         rx_scripts_year_11="PostRand RX Scripts Year11 (DSS)"
         rx_cost_year_11   ="PostRand RX Cost Year11 (DSS)"
         tot_cost_year_11  ="PostRand TOTAL Cost Year11 (DSS)"

         ip_days_year_12   ="PostRand IP Days Year12 (DSS)"
         ip_cost_year_12   ="PostRand IP Cost Year12 (DSS)"
         op_visits_year_12 ="PostRand OP Visits Year12 (DSS)"
         op_cost_year_12   ="PostRand OP Cost Year12 (DSS)"
         rx_scripts_year_12="PostRand RX Scripts Year12 (DSS)"
         rx_cost_year_12   ="PostRand RX Cost Year12 (DSS)"
         tot_cost_year_12  ="PostRand TOTAL Cost Year12 (DSS)"

         ip_days_year_13   ="PostRand IP Days Year13 (DSS)"
         ip_cost_year_13   ="PostRand IP Cost Year13 (DSS)"
         op_visits_year_13 ="PostRand OP Visits Year13 (DSS)"
         op_cost_year_13   ="PostRand OP Cost Year13 (DSS)"
         rx_scripts_year_13="PostRand RX Scripts Year13 (DSS)"
         rx_cost_year_13   ="PostRand RX Cost Year13 (DSS)"
         tot_cost_year_13  ="PostRand TOTAL Cost Year13 (DSS)"

   ;
run;

data &outf (label="&lbl");
   format idx_pre_surg_days
          idx_cost_adj
   ;
   merge index2
         year2plus_b
   ;
   by scrssn;
run;

proc contents data=&outf varnum;
   title1 "CSP517 -- PROC CONTENTS of Dataset &outf -- Year2+ Cost/Util Added To Analysis
Dataset";
   title2 "Note1: All Costs are in 2014 $";
   title3 "Note2: Data to FY14, up to 13 full periods for those who died (full period is 365
days)";
   title4 "Note3: Distance is ONE Way -- need to Multiply by 2 for round trip";
run; title;

proc means data=&outf n nmiss sum min mean max stddev;
   title1 "CSP517 -- PROC MEANS of Dataset &outf -- Year2+ Cost/Util Added To Analysis Dataset";
   title2 "Note1: All Costs are in 2014 $";
   title3 "Note2: Data to FY14, up to 13 full periods for those who died (full period is 365
days)";
   title4 "Note3: Distance is ONE Way -- need to Multiply by 2 for round trip";
run; title;

*************************************************************************;
* check missing;

*%include "/export/home/achow/code/chk_missing.sas";
%include "./chk_missing.sas";

%chk_missing(indsn =&outf /* Input SAS dataset name  */,
             outdsn=a     /* Output SAS dataset name */
            );

proc print data=a noobs label;
   title1 "CSP517 -- Check Missing Values -- Analysis Data Set (Patient Level) -- Index Thru
FY14";
   format NOBS comma8.
          miss_pct percent8.1
   ;
run; title;

*************************************************************************;
```

```
*  END  END  END  END  END  END  END  END  END  END  END  END  END  END   ;
*************************************************************************;
**********chk_missing.sas**********
*************************************************************************;

* Program:    /export/home/achow/code/chk_missing.sas                     ;

* Programmer: Adam Chow                                                   ;

* Date:       8/3/2010                                                    ;

* System:     UNIX/SUN                                                    ;

* Version:    SAS 9.1                                                     ;

* Purpose:    create an output file showing the % missing                 ;

*************************************************************************;


%macro chk_missing(indsn  = /* Input SAS dataset name  */,

                   outdsn = /* Output SAS dataset name */

                  );

*********************************************************;
* A. quick check of the 2 parameters entered             ;
*********************************************************;
%if %length(&indsn)  = 0 %then %do; %goto ENDIT1; %end;

%if %length(&outdsn) = 0 %then %do; %goto ENDIT1; %end;

*********************************************************;
* B. PROC CONTENTS of input SAS dataset                  ;
*********************************************************;
proc contents data=&indsn out=__adamc1__ noprint;
run;

*********************************************************;
* C. make a list of the var names, also show # of vars   ;
*********************************************************;
proc sql noprint;

   select name into :_v_list_ separated by '~' from __adamc1__

   ;
   select count(*) into :_numobs_ from __adamc1__

   ;
quit;

* print out to LOG;
%put _V_LIST_ = &_v_list_;
%put _NUMOBS_ = &_numobs_;

*********************************************************;
* D. summarize, transpose, merge back with __ADAMC1__    ;
*********************************************************;
proc sql;
   create table __adamc2__ as
   select
   %let __i__=1;
   %do %until(&__i__ > &_numobs_);

      %if &__i__ = &_numobs_ %then %do;
          nmiss(%scan(&_v_list_,&__i__,%str(~))) as %scan(&_v_list_,&__i__,%str(~))
      %end;
      %else %do;
          nmiss(%scan(&_v_list_,&__i__,%str(~))) as %scan(&_v_list_,&__i__,%str(~)),
      %end;
```

```
      %let __i__ = %eval(&__i__+1);
   %end;

   from &indsn
   ;
quit;

proc transpose data=__adamc2__
               out =__adamc3__ (rename=(col1=miss_count))
               name=vars
   ;
run;

proc sql;
   create table __adamc4__ as
   select a.varnum     as varnum   label="#",
          a.name       as name     label="Variable",
          a.type       as type,
          a.length     as length   label="Len",
          a.format     as format   label="Format",
          a.formatl,
          a.formatd,
          a.label      as label    label="Label",
          a.nobs,
          b.miss_count as miss_count
    from __adamc1__ as a
        left join
         __adamc3__ as b
    on a.name eq b.vars
    order by varnum
   ;
quit;

*********************************************************;
* E. calculate % missing, then output a dataset         ;
*********************************************************;
data __adamc5__;
   set __adamc4__;
   miss_pct=miss_count/nobs;
   format miss_count comma20.
          miss_pct   percent8.3
   ;
   label miss_count="Obs Missing Count"
         miss_pct  ="Obs Missing Pct(%)"
   ;
run;

data &outdsn;
   format varnum name type_;
   set __adamc5__;
   length type_ $4;
   if         type eq 1 then type_="Num";
      else if type eq 2 then type_="Char";
   if formatl ne 0 and formatd ne 0 then do;
     format=strip(format)||strip(put(formatl,3.))||"."||strip(put(formatd,3.));
   end;
   else if formatl ne 0  then format=strip(format)||strip(put(formatl,3.))||".";
   else if format  ne "" then format=strip(format)||".";
   label type_="Type";
   drop type formatl formatd;
run;

*********************************************************;
* F. delete temporary datasets                          ;
*********************************************************;
proc datasets nolist;

   delete
      __adamc1__
      __adamc2__
      __adamc3__
```

```
      __adamc4__
      __adamc5__
   ;
run;

quit;
*******************************************************;
* G. reset the macro variables                        ;
*******************************************************;
%let _v_list_ = EMPTY LIST;
%let _numobs_ = 0;

*******************************************************;
* H. Exit                                             ;
*******************************************************;
%goto ENDIT2;

%ENDIT1:

    %PUT ERROR: MACRO STOPPED - MUST ENTER ALL PARAMETERS;

%ENDIT2:
%mend chk_missing;



%macro skippy;
libname a "/static/austin/fen/fy09";

%chk_missing(indsn  = a.feninpt09  /* Input SAS dataset name  */,

             outdsn = inpt        /* Output SAS dataset name */

            );
%chk_missing(indsn  = a.fenipancil09  /* Input SAS dataset name  */,

             outdsn = ipancil        /* Output SAS dataset name */

            );
%chk_missing(indsn  = a.fenmed09  /* Input SAS dataset name  */,

             outdsn = med        /* Output SAS dataset name */

            );
%chk_missing(indsn  = a.fenphr09  /* Input SAS dataset name  */,

             outdsn = phr        /* Output SAS dataset name */

            );
%chk_missing(indsn  = a.fenphven09  /* Input SAS dataset name  */,

             outdsn = phven        /* Output SAS dataset name */

            );
%chk_missing(indsn  = a.fentvl09  /* Input SAS dataset name  */,

             outdsn = tvl        /* Output SAS dataset name */

            );
%chk_missing(indsn  = a.fenven09  /* Input SAS dataset name  */,

             outdsn = ven        /* Output SAS dataset name */

            );
%chk_missing(indsn  = a.fenvet09  /* Input SAS dataset name  */,

             outdsn = vet        /* Output SAS dataset name */

            );
```

```
%mend skippy;
```