Appendix 2:
Processing Medicare Input Data

R00 Data Management:
Uniting Mortality, Centers for Medicare and Medicaid (CMS) Inpatient and Outpatient Visits, Air Pollution, Temperature, Humidity, Solar Radiation, Pollen, and Parcel Characteristics

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Revision Date: v1.0 \\ 2023-10-20

```
* Log/List Options *;
options ls=120 ps=42 missing=' ' nocenter validvarname=upcase compress=binary;
*options work='e:\temp';

* Output SAS Library *;
libname mbsflib1 'T:\Data Management\CMS Data\DUA 51193\6925';
libname mbsflib2 'T:\Data Management\CMS Data\DUA 52573\8402';
libname xwlklib 'T:\Data Management\CMS Data\DUA 52573\8512';
libname zxwlklib 'T:\Data Management\zipzctaxwalks';
libname medprlib 'T:\Data Management\CMS Data\DUA 21521';
libname edurglib 'T:\Data Management\CMS Data\DUA 52573\8511';
libname outlib 'T:\Data Management\CMS Data\datasets';

* set script directory ;
%let scriptdir = "T:\Data Management\scripts";

* set year parameter ;
%let year = 2013;

* import the SSA, FIPS crosswalk from CSV;
%include "T:\Data Management\scripts\import_ssa_fips_xwalk.sas";

* import and process outpatient revenue center data ;
* revised to make a subset of only ed and urgent visits;
%include "T:\Data Management\scripts\outpatient_revenue_center_k_read_v8.sas";

* import and process outpatient base claims data and merge with revenue center data;
* this program has to be run after outpatient_revenue_center_k_read_v8_&year.sas;
%include "T:\Data Management\scripts\outpatient_base_claims_k_read_v8.sas";

* revise medpar files for stacking with outpatient claims ;
%include "T:\Data Management\scripts\make_medpar_rev.sas";

* stack and merge various master beneficiary summary component files ;
%include "T:\Data Management\scripts\make_mbsf_merged_summary.sas";

* stack outpatient claims with medpar claims and merge with combined MBSF file;
* this program needs to run last;
%include "T:\Data Management\scripts\stack_op_medpar_claims_merge_mbsf.sas";

* make the zip code population weighted centroid link file ;
%include "T:\Data Management\scripts\make_beneid_dates_zcta_coords.sas";
```

Appendix 2B: Importing SSA and FIPS crosswalk from CSV (import_ssa_fips_xwalk.sas)

```
*************************** import_ssa_fips_xwalk.sas ****************************;
* This program imports CSV ssa to fips xwalk into SAS and sorts it by SSA for merging ;
* Crosswalk Source: http://data.nber.org/data/ssa-fips-state-county-crosswalk.html    ;
********************************************************************************;

* set year of csv crosswalk ;
* default before 2011 is 2003, later years have own crosswalk;
%let csvyear = 2003;
%macro set_csvyear();
      %if &year < 2011 %then %do;
            %let csvyear = 2003;
      %end;
      %else %do;
            %let csvyear = &year;
      %end;
%mend;
%set_csvyear();

* import ssa to fips xwalk into sas ;
PROC IMPORT OUT= XWLKLIB.SSA_FIPS_XWALK_&year
            DATAFILE= "T:\Data Management\ssafipsxwalks\ssa_fips_state_county&csvyear..csv"
            DBMS=CSV REPLACE;
      GETNAMES=YES;
      DATAROW=2;
      GUESSINGROWS=100;
RUN;

* sort ssa to fips xwalk by ssa for merging ;
*? post 2011 vars change;
proc sort data=XWLKLIB.SSA_FIPS_XWALK_&year tagsort;
by SSA;
run;
```

Appendix 2C: Importing and Processing Outpatient Revenue Center Data (outpatient_revenue_center_k_read_v8.sas);

Please note that this code was revised to ultimately produce a subset of outpatient revenue center data containing only emergency department and urgent care visits.

```
* CMS CCW SAS Program
*
* Researcher: 000021074 - Regents of the University of Michigan
*
*  Request #: 8511 - Causal Mechanisms for Sustainable Adaptation to Adverse Heat and
Precipitation Health Effects
*
*       File: outpatient_revenue_center_k_read_v8.sas
*
*     Purpose: Generates SAS v8.x or greater Read-In Code for OUTPATIENT REVENUE FILE - VERSION K
CCW Extract file.
*              Run this program once to create permanent SAS Data Set.
*              This code was generated by ccw_sas2col.mac.
*
*       Date: 22MAR19   Time: 11:39
*
*       Help: cmsdata@gdit.com, 1-866-766-1915
*
*;

%let filepath = E:\Data\Temporary; * <-- Place Input File Path Here *;

* Log/List Options *;
options ls=120 ps=42 missing=' ' nocenter validvarname=upcase compress=binary;

* Output SAS Library *;
libname ccw 'T:\Data Management\CMS Data\DUA 52573\8511'; * <-- Place Output Library Path Here *;

* Input File Reference *;
filename in "%trim(&filepath)/outpatient_revenue_center_k_res000021074_req008511_&year..dat"
lrecl=377;

* list of outpatient_revenue_center_k variables to keep ;
%let oprevcenvars = BENE_ID CLM_ID CLM_THRU_DT CLM_LINE_NUM NCH_CLM_TYPE_CD REV_CNTR;

data ccw.outpatient_revenue_center_k(label='OUTPATIENT REVENUE FILE - VERSION K');
  * Lengths *;
  length BENE_ID                        $15
         CLM_ID                         $15
         CLM_THRU_DT                    8
         CLM_LINE_NUM                   8
         NCH_CLM_TYPE_CD                $2
         REV_CNTR                       $4
         REV_CNTR_DT                    8
         REV_CNTR_1ST_ANSI_CD           $5
         REV_CNTR_2ND_ANSI_CD           $5
         REV_CNTR_3RD_ANSI_CD           $5
         REV_CNTR_4TH_ANSI_CD           $5
         REV_CNTR_APC_HIPPS_CD          $5
         HCPCS_CD                       $5
         HCPCS_1ST_MDFR_CD              $5
         HCPCS_2ND_MDFR_CD              $5
         HCPCS_3RD_MDFR_CD              $5
         HCPCS_4TH_MDFR_CD              $5
```

```
       REV_CNTR_PMT_MTHD_IND_CD          $2
       REV_CNTR_DSCNT_IND_CD             $1
       REV_CNTR_PACKG_IND_CD             $1
       REV_CNTR_OTAF_PMT_CD              $1
       REV_CNTR_IDE_NDC_UPC_NUM          $24
       REV_CNTR_UNIT_CNT                 8
       REV_CNTR_RATE_AMT                 8
       REV_CNTR_BLOOD_DDCTBL_AMT         8
       REV_CNTR_CASH_DDCTBL_AMT          8
       REV_CNTR_COINSRNC_WGE_ADJSTD_C    8
       REV_CNTR_RDCD_COINSRNC_AMT        8
       REV_CNTR_1ST_MSP_PD_AMT           8
       REV_CNTR_2ND_MSP_PD_AMT           8
       REV_CNTR_PRVDR_PMT_AMT            8
       REV_CNTR_BENE_PMT_AMT             8
       REV_CNTR_PTNT_RSPNSBLTY_PMT       8
       REV_CNTR_PMT_AMT_AMT              8
       REV_CNTR_TOT_CHRG_AMT             8
       REV_CNTR_NCVRD_CHRG_AMT           8
       REV_CNTR_STUS_IND_CD              $2
       REV_CNTR_NDC_QTY                  8
       REV_CNTR_NDC_QTY_QLFR_CD          $2
       RNDRNG_PHYSN_UPIN                 $12
       RNDRNG_PHYSN_NPI                  $12
       RNDRNG_PHYSN_SPCLTY_CD            $2
       REV_CNTR_DDCTBL_COINSRNC_CD       $1
       REV_CNTR_PRCNG_IND_CD             $2
       THRPY_CAP_IND_CD1                 $1
       THRPY_CAP_IND_CD2                 $1
       RC_PTNT_ADD_ON_PYMT_AMT           8
       TRNSTNL_DRUG_ADD_ON_PYMT_AMT      8;

* Formats *;
format BENE_ID                          $15.
       CLM_ID                           $15.
       CLM_THRU_DT                      DATE9.
       CLM_LINE_NUM                     13.
       NCH_CLM_TYPE_CD                  $2.
       REV_CNTR                         $4.
       REV_CNTR_DT                      DATE9.
       REV_CNTR_1ST_ANSI_CD             $5.
       REV_CNTR_2ND_ANSI_CD             $5.
       REV_CNTR_3RD_ANSI_CD             $5.
       REV_CNTR_4TH_ANSI_CD             $5.
       REV_CNTR_APC_HIPPS_CD            $5.
       HCPCS_CD                         $5.
       HCPCS_1ST_MDFR_CD                $5.
       HCPCS_2ND_MDFR_CD                $5.
       HCPCS_3RD_MDFR_CD                $5.
       HCPCS_4TH_MDFR_CD                $5.
       REV_CNTR_PMT_MTHD_IND_CD         $2.
       REV_CNTR_DSCNT_IND_CD            $1.
       REV_CNTR_PACKG_IND_CD            $1.
       REV_CNTR_OTAF_PMT_CD             $1.
       REV_CNTR_IDE_NDC_UPC_NUM         $24.
       REV_CNTR_UNIT_CNT                8.
       REV_CNTR_RATE_AMT                12.2
       REV_CNTR_BLOOD_DDCTBL_AMT        12.2
       REV_CNTR_CASH_DDCTBL_AMT         12.2
       REV_CNTR_COINSRNC_WGE_ADJSTD_C   12.2
       REV_CNTR_RDCD_COINSRNC_AMT       12.2
```

```
        REV_CNTR_1ST_MSP_PD_AMT            12.2
        REV_CNTR_2ND_MSP_PD_AMT            12.2
        REV_CNTR_PRVDR_PMT_AMT             12.2
        REV_CNTR_BENE_PMT_AMT              12.2
        REV_CNTR_PTNT_RSPNSBLTY_PMT        12.2
        REV_CNTR_PMT_AMT_AMT               12.2
        REV_CNTR_TOT_CHRG_AMT              12.2
        REV_CNTR_NCVRD_CHRG_AMT            12.2
        REV_CNTR_STUS_IND_CD               $2.
        REV_CNTR_NDC_QTY                   10.3
        REV_CNTR_NDC_QTY_QLFR_CD           $2.
        RNDRNG_PHYSN_UPIN                  $12.
        RNDRNG_PHYSN_NPI                   $12.
        RNDRNG_PHYSN_SPCLTY_CD             $2.
        REV_CNTR_DDCTBL_COINSRNC_CD        $1.
        REV_CNTR_PRCNG_IND_CD              $2.
        THRPY_CAP_IND_CD1                  $1.
        THRPY_CAP_IND_CD2                  $1.
        RC_PTNT_ADD_ON_PYMT_AMT            12.2
        TRNSTNL_DRUG_ADD_ON_PYMT_AMT       12.4;

   * Labels *;
   label BENE_ID                    = "Encrypted 723 Beneficiary ID"
         CLM_ID                     = "Encrypted Claim ID"
         CLM_THRU_DT                = "Claim Through Date (Determines Year of Claim)"
         CLM_LINE_NUM               = "Claim Line Number"
         NCH_CLM_TYPE_CD            = "NCH Claim Type Code"
         REV_CNTR                   = "Revenue Center Code"
         REV_CNTR_DT                = "Revenue Center Date"
         REV_CNTR_1ST_ANSI_CD       = "Revenue Center 1st ANSI Code"
         REV_CNTR_2ND_ANSI_CD       = "Revenue Center 2nd ANSI Code"
         REV_CNTR_3RD_ANSI_CD       = "Revenue Center 3rd ANSI Code"
         REV_CNTR_4TH_ANSI_CD       = "Revenue Center 4th ANSI Code"
         REV_CNTR_APC_HIPPS_CD      = "Revenue Center APC/HIPPS"
         HCPCS_CD                   = "Revenue Center Healthcare Common Procedure Coding
System"
         HCPCS_1ST_MDFR_CD          = "Revenue Center HCPCS Initial Modifier Code"
         HCPCS_2ND_MDFR_CD          = "Revenue Center HCPCS Second Modifier Code"
         HCPCS_3RD_MDFR_CD          = "Revenue Center HCPCS Third Modifier Code"
         HCPCS_4TH_MDFR_CD          = "Revenue Center HCPCS Fourth Modifier Code"
         REV_CNTR_PMT_MTHD_IND_CD   = "Revenue Center Payment Method Indicator Code"
         REV_CNTR_DSCNT_IND_CD      = "Revenue Center Discount Indicator Code"
         REV_CNTR_PACKG_IND_CD      = "Revenue Center Packaging Indicator Code"
         REV_CNTR_OTAF_PMT_CD       = "Revenue Center Obligation to Accept As Full (OTAF)
Payment Code"
         REV_CNTR_IDE_NDC_UPC_NUM   = "Revenue Center IDE, NDC, UPC Number"
         REV_CNTR_UNIT_CNT          = "Revenue Center Unit Count"
         REV_CNTR_RATE_AMT          = "Revenue Center Rate Amount"
         REV_CNTR_BLOOD_DDCTBL_AMT  = "Revenue Center Blood Deductible Amount"
         REV_CNTR_CASH_DDCTBL_AMT   = "Revenue Center Cash Deductible Amount"
         REV_CNTR_COINSRNC_WGE_ADJSTD_C = "Revenue Center Coinsurance/Wage Adjusted Coinsurance
Amount"
         REV_CNTR_RDCD_COINSRNC_AMT = "Revenue Center Reduced Coinsurance Amount"
         REV_CNTR_1ST_MSP_PD_AMT    = "Revenue Center 1st Medicare Secondary Payer Paid
Amount"
         REV_CNTR_2ND_MSP_PD_AMT    = "Revenue Center 2nd Medicare Secondary Payer Paid
Amount"
         REV_CNTR_PRVDR_PMT_AMT     = "Revenue Center Provider Payment Amount"
         REV_CNTR_BENE_PMT_AMT      = "Revenue Center Beneficiary Payment Amount"
         REV_CNTR_PTNT_RSPNSBLTY_PMT = "Revenue Center Patient Responsibility Payment"
         REV_CNTR_PMT_AMT_AMT       = "Revenue Center Payment Amount Amount"
```

```
        REV_CNTR_TOT_CHRG_AMT              = "Revenue Center Total Charge Amount"
        REV_CNTR_NCVRD_CHRG_AMT            = "Revenue Center Non-Covered Charge Amount"
        REV_CNTR_STUS_IND_CD               = "Revenue Center Status Indicator Code"
        REV_CNTR_NDC_QTY                   = "Revenue Center NDC Quantity"
        REV_CNTR_NDC_QTY_QLFR_CD           = "Revenue Center NDC Quantity Qualifier Code"
        RNDRNG_PHYSN_UPIN                  = "Revenue Center Rendering Physician UPIN"
        RNDRNG_PHYSN_NPI                   = "Revenue Center Rendering Physician NPI"
        RNDRNG_PHYSN_SPCLTY_CD             = "Revenue Center Rendering Physician Specialty Code"
        REV_CNTR_DDCTBL_COINSRNC_CD        = "Revenue Center Deductible Coinsurance Code"
        REV_CNTR_PRCNG_IND_CD              = "Revenue Center Pricing Indicator Code"
        THRPY_CAP_IND_CD1                  = "Revenue Center Therapy Cap Indicator Code 1"
        THRPY_CAP_IND_CD2                  = "Revenue Center Therapy Cap Indicator Code 2"
        RC_PTNT_ADD_ON_PYMT_AMT            = "Revenue Center Patient/Initial Visit Add-On Payment
Amount"
        TRNSTNL_DRUG_ADD_ON_PYMT_AMT       = "Transitional Drug Add-On Payment Amount";

   infile in missover truncover;

   * Input Record *;
   input @00001 BENE_ID                        $15.
         @00016 CLM_ID                         $15.
         @00031 CLM_THRU_DT                    YYMMDD8.
         @00039 CLM_LINE_NUM                   13.
         @00052 NCH_CLM_TYPE_CD                $2.
         @00054 REV_CNTR                       $4.
         @00058 REV_CNTR_DT                    YYMMDD8.
         @00066 REV_CNTR_1ST_ANSI_CD           $5.
         @00071 REV_CNTR_2ND_ANSI_CD           $5.
         @00076 REV_CNTR_3RD_ANSI_CD           $5.
         @00081 REV_CNTR_4TH_ANSI_CD           $5.
         @00086 REV_CNTR_APC_HIPPS_CD          $5.
         @00091 HCPCS_CD                       $5.
         @00096 HCPCS_1ST_MDFR_CD              $5.
         @00101 HCPCS_2ND_MDFR_CD              $5.
         @00106 HCPCS_3RD_MDFR_CD              $5.
         @00111 HCPCS_4TH_MDFR_CD              $5.
         @00116 REV_CNTR_PMT_MTHD_IND_CD       $2.
         @00118 REV_CNTR_DSCNT_IND_CD          $1.
         @00119 REV_CNTR_PACKG_IND_CD          $1.
         @00120 REV_CNTR_OTAF_PMT_CD           $1.
         @00121 REV_CNTR_IDE_NDC_UPC_NUM       $24.
         @00145 REV_CNTR_UNIT_CNT              8.
         @00153 REV_CNTR_RATE_AMT              12.2
         @00165 REV_CNTR_BLOOD_DDCTBL_AMT      12.2
         @00177 REV_CNTR_CASH_DDCTBL_AMT       12.2
         @00189 REV_CNTR_COINSRNC_WGE_ADJSTD_C 12.2
         @00201 REV_CNTR_RDCD_COINSRNC_AMT     12.2
         @00213 REV_CNTR_1ST_MSP_PD_AMT        12.2
         @00225 REV_CNTR_2ND_MSP_PD_AMT        12.2
         @00237 REV_CNTR_PRVDR_PMT_AMT         12.2
         @00249 REV_CNTR_BENE_PMT_AMT          12.2
         @00261 REV_CNTR_PTNT_RSPNSBLTY_PMT    12.2
         @00273 REV_CNTR_PMT_AMT_AMT           12.2
         @00285 REV_CNTR_TOT_CHRG_AMT          12.2
         @00297 REV_CNTR_NCVRD_CHRG_AMT        12.2
         @00309 REV_CNTR_STUS_IND_CD           $2.
         @00311 REV_CNTR_NDC_QTY               10.3
         @00321 REV_CNTR_NDC_QTY_QLFR_CD       $2.
         @00323 RNDRNG_PHYSN_UPIN              $12.
         @00335 RNDRNG_PHYSN_NPI               $12.
         @00347 RNDRNG_PHYSN_SPCLTY_CD         $2.
```

```
        @00349 REV_CNTR_DDCTBL_COINSRNC_CD        $1.
        @00350 REV_CNTR_PRCNG_IND_CD              $2.
        @00352 THRPY_CAP_IND_CD1                  $1.
        @00353 THRPY_CAP_IND_CD2                  $1.
        @00354 RC_PTNT_ADD_ON_PYMT_AMT            12.2
        @00366 TRNSTNL_DRUG_ADD_ON_PYMT_AMT       12.4;

            /*Only ED and urgent care ('0516','0526') visits*/
            IF REV_CNTR IN ('0450','0451','0452','0456','0459','0516','0526','0981');

    * make year and source variables;
    source = "outpatient_revenue_center_k";
    year = &year;

    * Keep *;
    keep &oprevcenvars source year;

run;
/*70036551 records were read from the infile IN.
    The minimum record length was 377.
    The maximum record length was 377.
NOTE: The data set CCW.OUTPATIENT_REVENUE_CENTER_K has 1183303 observations and 6 variables.*/

title 'OUTPATIENT REVENUE FILE - VERSION K SAS Data Set for Researcher: 000021074';
proc contents data=ccw.outpatient_revenue_center_k varnum;
proc print data=ccw.outpatient_revenue_center_k (obs=10);
  title2 'Sample Listing - 10 Rows';
run;

proc means data=ccw.outpatient_revenue_center_k;
  title2 'Simple Means';
run;

* End of Program *;
```

Once the outpatient base claims data is processed, it is then also merged with the revenue center data produced via the process described in Appendix 2-C.

Please note that this process must be run after outpatient_revenue_center_k_read_v8_&year.sas runs to completion in order to function properly.

```
* CMS CCW SAS Program
*
* Researcher: 000021074 - Regents of the University of Michigan
*
*  Request #: 8511 - Causal Mechanisms for Sustainable Adaptation to Adverse Heat and
Precipitation Health Effects
*
*       File: outpatient_base_claims_k_read_v8.sas
*
*    Purpose: Generates SAS v8.x or greater Read-In Code for OUTPATIENT BASE CLAIM FILE - VERSION
K CCW Extract file.
*              Run this program once to create permanent SAS Data Set.
*              This code was generated by ccw_sas2col.mac.
*
*       Date: 22MAR19  Time: 11:38
*
*       Help: cmsdata@gdit.com, 1-866-766-1915
*
*;

%let filepath = E:\Data\Temporary; * <-- Place Input File Path Here *;

* Log/List Options *;
options ls=120 ps=42 missing=' ' nocenter validvarname=upcase compress=binary;

* Output SAS Library *;
libname ccw 'T:\Data Management\CMS Data\DUA 52573\8511'; * <-- Place Output Library Path Here *;

* Input File Reference *;
filename in "%trim(&filepath)/outpatient_base_claims_k_res000021074_req008511_&year..dat"
lrecl=1099;

* subset of vars to keep;
%let opbaseclaimsvars =
      BENE_ID
      CLM_ID
      NCH_NEAR_LINE_REC_IDENT_CD
      NCH_CLM_TYPE_CD
      CLM_FROM_DT
      CLM_THRU_DT
      NCH_WKLY_PROC_DT
      FI_CLM_PROC_DT
      CLAIM_QUERY_CODE
      ADMTG_DGNS_CD
      PRNCPAL_DGNS_CD
      ICD_DGNS_CD1
      CLM_POA_IND_SW1
      ICD_DGNS_CD2
      CLM_POA_IND_SW2
      ICD_DGNS_CD3
      CLM_POA_IND_SW3
      ICD_DGNS_CD4
```

CLM_POA_IND_SW4
ICD_DGNS_CD5
CLM_POA_IND_SW5
ICD_DGNS_CD6
CLM_POA_IND_SW6
ICD_DGNS_CD7
CLM_POA_IND_SW7
ICD_DGNS_CD8
CLM_POA_IND_SW8
ICD_DGNS_CD9
CLM_POA_IND_SW9
ICD_DGNS_CD10
CLM_POA_IND_SW10
ICD_DGNS_CD11
CLM_POA_IND_SW11
ICD_DGNS_CD12
CLM_POA_IND_SW12
ICD_DGNS_CD13
CLM_POA_IND_SW13
ICD_DGNS_CD14
CLM_POA_IND_SW14
ICD_DGNS_CD15
CLM_POA_IND_SW15
ICD_DGNS_CD16
CLM_POA_IND_SW16
ICD_DGNS_CD17
CLM_POA_IND_SW17
ICD_DGNS_CD18
CLM_POA_IND_SW18
ICD_DGNS_CD19
CLM_POA_IND_SW19
ICD_DGNS_CD20
CLM_POA_IND_SW20
ICD_DGNS_CD21
CLM_POA_IND_SW21
ICD_DGNS_CD22
CLM_POA_IND_SW22
ICD_DGNS_CD23
CLM_POA_IND_SW23
ICD_DGNS_CD24
CLM_POA_IND_SW24
ICD_DGNS_CD25
CLM_POA_IND_SW25
FST_DGNS_E_CD
ICD_DGNS_E_CD1
CLM_E_POA_IND_SW1
ICD_DGNS_E_CD2
CLM_E_POA_IND_SW2
ICD_DGNS_E_CD3
CLM_E_POA_IND_SW3
ICD_DGNS_E_CD4
CLM_E_POA_IND_SW4
ICD_DGNS_E_CD5
CLM_E_POA_IND_SW5
ICD_DGNS_E_CD6
CLM_E_POA_IND_SW6
ICD_DGNS_E_CD7
CLM_E_POA_IND_SW7
ICD_DGNS_E_CD8
CLM_E_POA_IND_SW8
ICD_DGNS_E_CD9

```
            CLM_E_POA_IND_SW9
            ICD_DGNS_E_CD10
            CLM_E_POA_IND_SW10
            ICD_DGNS_E_CD11
            CLM_E_POA_IND_SW11
            ICD_DGNS_E_CD12
            CLM_E_POA_IND_SW12
            DOB_DT
            GNDR_CD
            BENE_RACE_CD
            BENE_CNTY_CD
            BENE_STATE_CD
            BENE_MLG_CNTCT_ZIP_CD;


data ccw.outpatient_base_claims_k(label='OUTPATIENT BASE CLAIM FILE - VERSION K');
  * Lengths *;
  length BENE_ID                          $15
         CLM_ID                           $15
         NCH_NEAR_LINE_REC_IDENT_CD       $1
         NCH_CLM_TYPE_CD                  $2
         CLM_FROM_DT                      8
         CLM_THRU_DT                      8
         NCH_WKLY_PROC_DT                 8
         FI_CLM_PROC_DT                   8
         CLAIM_QUERY_CODE                 $1
         PRVDR_NUM                        $10
         CLM_FAC_TYPE_CD                  $1
         CLM_SRVC_CLSFCTN_TYPE_CD         $1
         CLM_FREQ_CD                      $1
         FI_NUM                           $5
         CLM_MDCR_NON_PMT_RSN_CD          $2
         CLM_PMT_AMT                      8
         NCH_PRMRY_PYR_CLM_PD_AMT         8
         NCH_PRMRY_PYR_CD                 $1
         PRVDR_STATE_CD                   $2
         ORG_NPI_NUM                      $10
         SRVC_LOC_NPI_NUM                 $22
         AT_PHYSN_UPIN                    $12
         AT_PHYSN_NPI                     $12
         AT_PHYSN_SPCLTY_CD               $2
         OP_PHYSN_UPIN                    $12
         OP_PHYSN_NPI                     $12
         OP_PHYSN_SPCLTY_CD               $2
         OT_PHYSN_UPIN                    $12
         OT_PHYSN_NPI                     $12
         OT_PHYSN_SPCLTY_CD               $2
         RNDRNG_PHYSN_NPI                 $12
         RNDRNG_PHYSN_SPCLTY_CD           $2
         RFR_PHYSN_NPI                    $12
         RFR_PHYSN_SPCLTY_CD              $2
         CLM_MCO_PD_SW                    $1
         PTNT_DSCHRG_STUS_CD              $2
         CLM_TOT_CHRG_AMT                 8
         NCH_BENE_BLOOD_DDCTBL_LBLTY_AM   8
         NCH_PROFNL_CMPNT_CHRG_AMT        8
         PRNCPAL_DGNS_CD                  $7
         ICD_DGNS_CD1                     $7
         ICD_DGNS_CD2                     $7
         ICD_DGNS_CD3                     $7
```

ICD_DGNS_CD4	$7
ICD_DGNS_CD5	$7
ICD_DGNS_CD6	$7
ICD_DGNS_CD7	$7
ICD_DGNS_CD8	$7
ICD_DGNS_CD9	$7
ICD_DGNS_CD10	$7
ICD_DGNS_CD11	$7
ICD_DGNS_CD12	$7
ICD_DGNS_CD13	$7
ICD_DGNS_CD14	$7
ICD_DGNS_CD15	$7
ICD_DGNS_CD16	$7
ICD_DGNS_CD17	$7
ICD_DGNS_CD18	$7
ICD_DGNS_CD19	$7
ICD_DGNS_CD20	$7
ICD_DGNS_CD21	$7
ICD_DGNS_CD22	$7
ICD_DGNS_CD23	$7
ICD_DGNS_CD24	$7
ICD_DGNS_CD25	$7
FST_DGNS_E_CD	$7
ICD_DGNS_E_CD1	$7
ICD_DGNS_E_CD2	$7
ICD_DGNS_E_CD3	$7
ICD_DGNS_E_CD4	$7
ICD_DGNS_E_CD5	$7
ICD_DGNS_E_CD6	$7
ICD_DGNS_E_CD7	$7
ICD_DGNS_E_CD8	$7
ICD_DGNS_E_CD9	$7
ICD_DGNS_E_CD10	$7
ICD_DGNS_E_CD11	$7
ICD_DGNS_E_CD12	$7
ICD_PRCDR_CD1	$7
PRCDR_DT1	8
ICD_PRCDR_CD2	$7
PRCDR_DT2	8
ICD_PRCDR_CD3	$7
PRCDR_DT3	8
ICD_PRCDR_CD4	$7
PRCDR_DT4	8
ICD_PRCDR_CD5	$7
PRCDR_DT5	8
ICD_PRCDR_CD6	$7
PRCDR_DT6	8
ICD_PRCDR_CD7	$7
PRCDR_DT7	8
ICD_PRCDR_CD8	$7
PRCDR_DT8	8
ICD_PRCDR_CD9	$7
PRCDR_DT9	8
ICD_PRCDR_CD10	$7
PRCDR_DT10	8
ICD_PRCDR_CD11	$7
PRCDR_DT11	8
ICD_PRCDR_CD12	$7
PRCDR_DT12	8
ICD_PRCDR_CD13	$7
PRCDR_DT13	8

```
            ICD_PRCDR_CD14                  $7
            PRCDR_DT14                      8
            ICD_PRCDR_CD15                  $7
            PRCDR_DT15                      8
            ICD_PRCDR_CD16                  $7
            PRCDR_DT16                      8
            ICD_PRCDR_CD17                  $7
            PRCDR_DT17                      8
            ICD_PRCDR_CD18                  $7
            PRCDR_DT18                      8
            ICD_PRCDR_CD19                  $7
            PRCDR_DT19                      8
            ICD_PRCDR_CD20                  $7
            PRCDR_DT20                      8
            ICD_PRCDR_CD21                  $7
            PRCDR_DT21                      8
            ICD_PRCDR_CD22                  $7
            PRCDR_DT22                      8
            ICD_PRCDR_CD23                  $7
            PRCDR_DT23                      8
            ICD_PRCDR_CD24                  $7
            PRCDR_DT24                      8
            ICD_PRCDR_CD25                  $7
            PRCDR_DT25                      8
            RSN_VISIT_CD1                   $7
            RSN_VISIT_CD2                   $7
            RSN_VISIT_CD3                   $7
            NCH_BENE_PTB_DDCTBL_AMT         8
            NCH_BENE_PTB_COINSRNC_AMT       8
            CLM_OP_PRVDR_PMT_AMT            8
            CLM_OP_BENE_PMT_AMT             8
            DOB_DT                          8
            GNDR_CD                         $1
            BENE_RACE_CD                    $1
            BENE_CNTY_CD                    $3
            BENE_STATE_CD                   $2
            BENE_MLG_CNTCT_ZIP_CD           $9
            CLM_MDCL_REC                    $17
            FI_CLM_ACTN_CD                  $1
            NCH_BLOOD_PNTS_FRNSHD_QTY       3
            CLM_TRTMT_AUTHRZTN_NUM          $18
            CLM_PRCR_RTRN_CD                $2
            CLM_SRVC_FAC_ZIP_CD             $9
            CLM_OP_TRANS_TYPE_CD            $1
            CLM_OP_ESRD_MTHD_CD             $1
            CLM_NEXT_GNRTN_ACO_IND_CD1      $1
            CLM_NEXT_GNRTN_ACO_IND_CD2      $1
            CLM_NEXT_GNRTN_ACO_IND_CD3      $1
            CLM_NEXT_GNRTN_ACO_IND_CD4      $1
            CLM_NEXT_GNRTN_ACO_IND_CD5      $1
            ACO_ID_NUM                      $10
            CLM_BENE_ID_TYPE_CD             $1;

    * Formats *;
    format BENE_ID                          $15.
            CLM_ID                          $15.
            NCH_NEAR_LINE_REC_IDENT_CD      $1.
            NCH_CLM_TYPE_CD                 $2.
            CLM_FROM_DT                     DATE9.
            CLM_THRU_DT                     DATE9.
            NCH_WKLY_PROC_DT                DATE9.
```

```
FI_CLM_PROC_DT                    DATE9.
CLAIM_QUERY_CODE                  $1.
PRVDR_NUM                         $10.
CLM_FAC_TYPE_CD                   $1.
CLM_SRVC_CLSFCTN_TYPE_CD          $1.
CLM_FREQ_CD                       $1.
FI_NUM                            $5.
CLM_MDCR_NON_PMT_RSN_CD           $2.
CLM_PMT_AMT                       12.2
NCH_PRMRY_PYR_CLM_PD_AMT          12.2
NCH_PRMRY_PYR_CD                  $1.
PRVDR_STATE_CD                    $2.
ORG_NPI_NUM                       $10.
SRVC_LOC_NPI_NUM                  $22.
AT_PHYSN_UPIN                     $12.
AT_PHYSN_NPI                      $12.
AT_PHYSN_SPCLTY_CD                $2.
OP_PHYSN_UPIN                     $12.
OP_PHYSN_NPI                      $12.
OP_PHYSN_SPCLTY_CD                $2.
OT_PHYSN_UPIN                     $12.
OT_PHYSN_NPI                      $12.
OT_PHYSN_SPCLTY_CD                $2.
RNDRNG_PHYSN_NPI                  $12.
RNDRNG_PHYSN_SPCLTY_CD            $2.
RFR_PHYSN_NPI                     $12.
RFR_PHYSN_SPCLTY_CD               $2.
CLM_MCO_PD_SW                     $1.
PTNT_DSCHRG_STUS_CD               $2.
CLM_TOT_CHRG_AMT                  12.2
NCH_BENE_BLOOD_DDCTBL_LBLTY_AM    12.2
NCH_PROFNL_CMPNT_CHRG_AMT         12.2
PRNCPAL_DGNS_CD                   $7.
ICD_DGNS_CD1                      $7.
ICD_DGNS_CD2                      $7.
ICD_DGNS_CD3                      $7.
ICD_DGNS_CD4                      $7.
ICD_DGNS_CD5                      $7.
ICD_DGNS_CD6                      $7.
ICD_DGNS_CD7                      $7.
ICD_DGNS_CD8                      $7.
ICD_DGNS_CD9                      $7.
ICD_DGNS_CD10                     $7.
ICD_DGNS_CD11                     $7.
ICD_DGNS_CD12                     $7.
ICD_DGNS_CD13                     $7.
ICD_DGNS_CD14                     $7.
ICD_DGNS_CD15                     $7.
ICD_DGNS_CD16                     $7.
ICD_DGNS_CD17                     $7.
ICD_DGNS_CD18                     $7.
ICD_DGNS_CD19                     $7.
ICD_DGNS_CD20                     $7.
ICD_DGNS_CD21                     $7.
ICD_DGNS_CD22                     $7.
ICD_DGNS_CD23                     $7.
ICD_DGNS_CD24                     $7.
ICD_DGNS_CD25                     $7.
FST_DGNS_E_CD                     $7.
ICD_DGNS_E_CD1                    $7.
ICD_DGNS_E_CD2                    $7.
```

ICD_DGNS_E_CD3	$7.
ICD_DGNS_E_CD4	$7.
ICD_DGNS_E_CD5	$7.
ICD_DGNS_E_CD6	$7.
ICD_DGNS_E_CD7	$7.
ICD_DGNS_E_CD8	$7.
ICD_DGNS_E_CD9	$7.
ICD_DGNS_E_CD10	$7.
ICD_DGNS_E_CD11	$7.
ICD_DGNS_E_CD12	$7.
ICD_PRCDR_CD1	$7.
PRCDR_DT1	DATE9.
ICD_PRCDR_CD2	$7.
PRCDR_DT2	DATE9.
ICD_PRCDR_CD3	$7.
PRCDR_DT3	DATE9.
ICD_PRCDR_CD4	$7.
PRCDR_DT4	DATE9.
ICD_PRCDR_CD5	$7.
PRCDR_DT5	DATE9.
ICD_PRCDR_CD6	$7.
PRCDR_DT6	DATE9.
ICD_PRCDR_CD7	$7.
PRCDR_DT7	DATE9.
ICD_PRCDR_CD8	$7.
PRCDR_DT8	DATE9.
ICD_PRCDR_CD9	$7.
PRCDR_DT9	DATE9.
ICD_PRCDR_CD10	$7.
PRCDR_DT10	DATE9.
ICD_PRCDR_CD11	$7.
PRCDR_DT11	DATE9.
ICD_PRCDR_CD12	$7.
PRCDR_DT12	DATE9.
ICD_PRCDR_CD13	$7.
PRCDR_DT13	DATE9.
ICD_PRCDR_CD14	$7.
PRCDR_DT14	DATE9.
ICD_PRCDR_CD15	$7.
PRCDR_DT15	DATE9.
ICD_PRCDR_CD16	$7.
PRCDR_DT16	DATE9.
ICD_PRCDR_CD17	$7.
PRCDR_DT17	DATE9.
ICD_PRCDR_CD18	$7.
PRCDR_DT18	DATE9.
ICD_PRCDR_CD19	$7.
PRCDR_DT19	DATE9.
ICD_PRCDR_CD20	$7.
PRCDR_DT20	DATE9.
ICD_PRCDR_CD21	$7.
PRCDR_DT21	DATE9.
ICD_PRCDR_CD22	$7.
PRCDR_DT22	DATE9.
ICD_PRCDR_CD23	$7.
PRCDR_DT23	DATE9.
ICD_PRCDR_CD24	$7.
PRCDR_DT24	DATE9.
ICD_PRCDR_CD25	$7.
PRCDR_DT25	DATE9.
RSN_VISIT_CD1	$7.

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         RSN_VISIT_CD2                    $7.
         RSN_VISIT_CD3                    $7.
         NCH_BENE_PTB_DDCTBL_AMT          12.2
         NCH_BENE_PTB_COINSRNC_AMT        12.2
         CLM_OP_PRVDR_PMT_AMT             12.2
         CLM_OP_BENE_PMT_AMT              12.2
         DOB_DT                           DATE9.
         GNDR_CD                          $1.
         BENE_RACE_CD                     $1.
         BENE_CNTY_CD                     $3.
         BENE_STATE_CD                    $2.
         BENE_MLG_CNTCT_ZIP_CD            $9.
         CLM_MDCL_REC                     $17.
         FI_CLM_ACTN_CD                   $1.
         NCH_BLOOD_PNTS_FRNSHD_QTY        3.
         CLM_TRTMT_AUTHRZTN_NUM           $18.
         CLM_PRCR_RTRN_CD                 $2.
         CLM_SRVC_FAC_ZIP_CD              $9.
         CLM_OP_TRANS_TYPE_CD             $1.
         CLM_OP_ESRD_MTHD_CD              $1.
         CLM_NEXT_GNRTN_ACO_IND_CD1       $1.
         CLM_NEXT_GNRTN_ACO_IND_CD2       $1.
         CLM_NEXT_GNRTN_ACO_IND_CD3       $1.
         CLM_NEXT_GNRTN_ACO_IND_CD4       $1.
         CLM_NEXT_GNRTN_ACO_IND_CD5       $1.
         ACO_ID_NUM                       $10.
         CLM_BENE_ID_TYPE_CD              $1.;

 * Labels *;
 label BENE_ID                     = "Encrypted 723 Beneficiary ID"
       CLM_ID                      = "Encrypted Claim ID"
       NCH_NEAR_LINE_REC_IDENT_CD  = "NCH Near Line Record Identification Code"
       NCH_CLM_TYPE_CD             = "NCH Claim Type Code"
       CLM_FROM_DT                 = "Claim From Date"
       CLM_THRU_DT                 = "Claim Through Date (Determines Year of Claim)"
       NCH_WKLY_PROC_DT            = "NCH Weekly Claim Processing Date"
       FI_CLM_PROC_DT              = "FI Claim Process Date"
       CLAIM_QUERY_CODE            = "Claim Query Code"
       PRVDR_NUM                   = "Provider Number"
       CLM_FAC_TYPE_CD             = "Claim Facility Type Code"
       CLM_SRVC_CLSFCTN_TYPE_CD    = "Claim Service classification Type Code"
       CLM_FREQ_CD                 = "Claim Frequency Code"
       FI_NUM                      = "FI Number"
       CLM_MDCR_NON_PMT_RSN_CD     = "Claim Medicare Non Payment Reason Code"
       CLM_PMT_AMT                 = "Claim Payment Amount"
       NCH_PRMRY_PYR_CLM_PD_AMT    = "NCH Primary Payer Claim Paid Amount"
       NCH_PRMRY_PYR_CD            = "NCH Primary Payer Code"
       PRVDR_STATE_CD              = "NCH Provider State Code"
       ORG_NPI_NUM                 = "Organization NPI Number"
       SRVC_LOC_NPI_NUM            = "Claim Service Location NPI Number"
       AT_PHYSN_UPIN               = "Claim Attending Physician UPIN Number"
       AT_PHYSN_NPI                = "Claim Attending Physician NPI Number"
       AT_PHYSN_SPCLTY_CD          = "Claim Attending Physician Specialty Code"
       OP_PHYSN_UPIN               = "Claim Operating Physician UPIN Number"
       OP_PHYSN_NPI                = "Claim Operating Physician NPI Number"
       OP_PHYSN_SPCLTY_CD          = "Claim Operating Physician Specialty Code"
       OT_PHYSN_UPIN               = "Claim Other Physician UPIN Number"
       OT_PHYSN_NPI                = "Claim Other Physician NPI Number"
       OT_PHYSN_SPCLTY_CD          = "Claim Other Physician Specialty Code"
       RNDRNG_PHYSN_NPI            = "Claim Rendering Physician NPI"
       RNDRNG_PHYSN_SPCLTY_CD      = "Claim Rendering Physician Specialty Code"
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RFR_PHYSN_NPI                    = "Claim Referring Physician NPI"
RFR_PHYSN_SPCLTY_CD              = "Claim Referring Physician Specialty Code"
CLM_MCO_PD_SW                    = "Claim MCO Paid Switch"
PTNT_DSCHRG_STUS_CD             = "Patient Discharge Status Code"
CLM_TOT_CHRG_AMT                = "Claim Total Charge Amount"
NCH_BENE_BLOOD_DDCTBL_LBLTY_AM  = "NCH Beneficiary Blood Deductible Liability Amount"
NCH_PROFNL_CMPNT_CHRG_AMT       = "NCH Professional Component Charge"
PRNCPAL_DGNS_CD                 = "Primary Claim Diagnosis Code"
ICD_DGNS_CD1                    = "Claim Diagnosis Code I"
ICD_DGNS_CD2                    = "Claim Diagnosis Code II"
ICD_DGNS_CD3                    = "Claim Diagnosis Code III"
ICD_DGNS_CD4                    = "Claim Diagnosis Code IV"
ICD_DGNS_CD5                    = "Claim Diagnosis Code V"
ICD_DGNS_CD6                    = "Claim Diagnosis Code VI"
ICD_DGNS_CD7                    = "Claim Diagnosis Code VII"
ICD_DGNS_CD8                    = "Claim Diagnosis Code VIII"
ICD_DGNS_CD9                    = "Claim Diagnosis Code IX"
ICD_DGNS_CD10                   = "Claim Diagnosis Code X"
ICD_DGNS_CD11                   = "Claim Diagnosis Code XI"
ICD_DGNS_CD12                   = "Claim Diagnosis Code XII"
ICD_DGNS_CD13                   = "Claim Diagnosis Code XIII"
ICD_DGNS_CD14                   = "Claim Diagnosis Code XIV"
ICD_DGNS_CD15                   = "Claim Diagnosis Code XV"
ICD_DGNS_CD16                   = "Claim Diagnosis Code XVI"
ICD_DGNS_CD17                   = "Claim Diagnosis Code XVII"
ICD_DGNS_CD18                   = "Claim Diagnosis Code XVIII"
ICD_DGNS_CD19                   = "Claim Diagnosis Code XIX"
ICD_DGNS_CD20                   = "Claim Diagnosis Code XX"
ICD_DGNS_CD21                   = "Claim Diagnosis Code XXI"
ICD_DGNS_CD22                   = "Claim Diagnosis Code XXII"
ICD_DGNS_CD23                   = "Claim Diagnosis Code XXIII"
ICD_DGNS_CD24                   = "Claim Diagnosis Code XXIV"
ICD_DGNS_CD25                   = "Claim Diagnosis Code XXV"
FST_DGNS_E_CD                   = "First Claim Diagnosis E Code"
ICD_DGNS_E_CD1                  = "Claim Diagnosis E Code I"
ICD_DGNS_E_CD2                  = "Claim Diagnosis E Code II"
ICD_DGNS_E_CD3                  = "Claim Diagnosis E Code III"
ICD_DGNS_E_CD4                  = "Claim Diagnosis E Code IV"
ICD_DGNS_E_CD5                  = "Claim Diagnosis E Code V"
ICD_DGNS_E_CD6                  = "Claim Diagnosis E Code VI"
ICD_DGNS_E_CD7                  = "Claim Diagnosis E Code VII"
ICD_DGNS_E_CD8                  = "Claim Diagnosis E Code VIII"
ICD_DGNS_E_CD9                  = "Claim Diagnosis E Code IX"
ICD_DGNS_E_CD10                 = "Claim Diagnosis E Code X"
ICD_DGNS_E_CD11                 = "Claim Diagnosis E Code XI"
ICD_DGNS_E_CD12                 = "Claim Diagnosis E Code XII"
ICD_PRCDR_CD1                   = "Claim Procedure Code I"
PRCDR_DT1                       = "Claim Procedure Code I Date"
ICD_PRCDR_CD2                   = "Claim Procedure Code II"
PRCDR_DT2                       = "Claim Procedure Code II Date"
ICD_PRCDR_CD3                   = "Claim Procedure Code III"
PRCDR_DT3                       = "Claim Procedure Code III Date"
ICD_PRCDR_CD4                   = "Claim Procedure Code IV"
PRCDR_DT4                       = "Claim Procedure Code IV Date"
ICD_PRCDR_CD5                   = "Claim Procedure Code V"
PRCDR_DT5                       = "Claim Procedure Code V Date"
ICD_PRCDR_CD6                   = "Claim Procedure Code VI"
PRCDR_DT6                       = "Claim Procedure Code VI Date"
ICD_PRCDR_CD7                   = "Claim Procedure Code VII"
PRCDR_DT7                       = "Claim Procedure Code VII Date"
ICD_PRCDR_CD8                   = "Claim Procedure Code VIII"
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        PRCDR_DT8                      = "Claim Procedure Code VIII Date"
        ICD_PRCDR_CD9                  = "Claim Procedure Code IX"
        PRCDR_DT9                      = "Claim Procedure Code IX Date"
        ICD_PRCDR_CD10                 = "Claim Procedure Code X"
        PRCDR_DT10                     = "Claim Procedure Code X Date"
        ICD_PRCDR_CD11                 = "Claim Procedure Code XI"
        PRCDR_DT11                     = "Claim Procedure Code XI Date"
        ICD_PRCDR_CD12                 = "Claim Procedure Code XII"
        PRCDR_DT12                     = "Claim Procedure Code XII Date"
        ICD_PRCDR_CD13                 = "Claim Procedure Code XIII"
        PRCDR_DT13                     = "Claim Procedure Code XIII Date"
        ICD_PRCDR_CD14                 = "Claim Procedure Code XIV"
        PRCDR_DT14                     = "Claim Procedure Code XIV Date"
        ICD_PRCDR_CD15                 = "Claim Procedure Code XV"
        PRCDR_DT15                     = "Claim Procedure Code XV Date"
        ICD_PRCDR_CD16                 = "Claim Procedure Code XVI"
        PRCDR_DT16                     = "Claim Procedure Code XVI Date"
        ICD_PRCDR_CD17                 = "Claim Procedure Code XVII"
        PRCDR_DT17                     = "Claim Procedure Code XVII Date"
        ICD_PRCDR_CD18                 = "Claim Procedure Code XVIII"
        PRCDR_DT18                     = "Claim Procedure Code XVIII Date"
        ICD_PRCDR_CD19                 = "Claim Procedure Code XIX"
        PRCDR_DT19                     = "Claim Procedure Code XIX Date"
        ICD_PRCDR_CD20                 = "Claim Procedure Code XX"
        PRCDR_DT20                     = "Claim Procedure Code XX Date"
        ICD_PRCDR_CD21                 = "Claim Procedure Code XXI"
        PRCDR_DT21                     = "Claim Procedure Code XXI Date"
        ICD_PRCDR_CD22                 = "Claim Procedure Code XXII"
        PRCDR_DT22                     = "Claim Procedure Code XXII Date"
        ICD_PRCDR_CD23                 = "Claim Procedure Code XXIII"
        PRCDR_DT23                     = "Claim Procedure Code XXIII Date"
        ICD_PRCDR_CD24                 = "Claim Procedure Code XXIV"
        PRCDR_DT24                     = "Claim Procedure Code XXIV Date"
        ICD_PRCDR_CD25                 = "Claim Procedure Code XXV"
        PRCDR_DT25                     = "Claim Procedure Code XXV Date"
        RSN_VISIT_CD1                  = "Reason for Visit Diagnosis Code I"
        RSN_VISIT_CD2                  = "Reason for Visit Diagnosis Code II"
        RSN_VISIT_CD3                  = "Reason for Visit Diagnosis Code III"
        NCH_BENE_PTB_DDCTBL_AMT        = "NCH Beneficiary Part B Deductible Amount"
        NCH_BENE_PTB_COINSRNC_AMT      = "NCH Beneficiary Part B Coinsurance Amount"
        CLM_OP_PRVDR_PMT_AMT           = "Claim Outpatient Provider Payment Amount"
        CLM_OP_BENE_PMT_AMT            = "Claim Outpatient Beneficiary Payment Amount"
        DOB_DT                         = "Date of Birth from Claim (Date)"
        GNDR_CD                        = "Gender Code from Claim"
        BENE_RACE_CD                   = "Race Code from Claim"
        BENE_CNTY_CD                   = "County Code from Claim (SSA)"
        BENE_STATE_CD                  = "State Code from Claim (SSA)"
        BENE_MLG_CNTCT_ZIP_CD          = "Zip Code of Residence from Claim"
        CLM_MDCL_REC                   = "Claim Medical Record Number"
        FI_CLM_ACTN_CD                 = "FI Claim Action Code"
        NCH_BLOOD_PNTS_FRNSHD_QTY      = "NCH Blood Pints Furnished Quantity"
        CLM_TRTMT_AUTHRZTN_NUM         = "Claim Treatment Authorization Number"
        CLM_PRCR_RTRN_CD               = "Claim Pricer Return Code"
        CLM_SRVC_FAC_ZIP_CD            = "Claim Service Facility ZIP Code"
        CLM_OP_TRANS_TYPE_CD           = "Claim Outpatient Transaction Type Code"
        CLM_OP_ESRD_MTHD_CD            = "Claim Outpatient ESRD Method Of Reimbursement Code"
        CLM_NEXT_GNRTN_ACO_IND_CD1     = "Claim Next Generation Accountable Care Organization
Indicator Code 1"
        CLM_NEXT_GNRTN_ACO_IND_CD2     = "Claim Next Generation Accountable Care Organization
Indicator Code 2"
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        CLM_NEXT_GNRTN_ACO_IND_CD3        = "Claim Next Generation Accountable Care Organization
Indicator Code 3"
        CLM_NEXT_GNRTN_ACO_IND_CD4        = "Claim Next Generation Accountable Care Organization
Indicator Code 4"
        CLM_NEXT_GNRTN_ACO_IND_CD5        = "Claim Next Generation Accountable Care Organization
Indicator Code 5"
        ACO_ID_NUM                        = "Claim Accountable Care Organization (ACO)
Identification Number"
        CLM_BENE_ID_TYPE_CD               = "For CMS Internal Use Only";

   infile in missover truncover;

   * Input Record *;
   input @00001 BENE_ID                          $15.
         @00016 CLM_ID                           $15.
         @00031 NCH_NEAR_LINE_REC_IDENT_CD       $1.
         @00032 NCH_CLM_TYPE_CD                  $2.
         @00034 CLM_FROM_DT                       YYMMDD8.
         @00042 CLM_THRU_DT                       YYMMDD8.
         @00050 NCH_WKLY_PROC_DT                  YYMMDD8.
         @00058 FI_CLM_PROC_DT                    YYMMDD8.
         @00066 CLAIM_QUERY_CODE                 $1.
         @00067 PRVDR_NUM                        $10.
         @00077 CLM_FAC_TYPE_CD                  $1.
         @00078 CLM_SRVC_CLSFCTN_TYPE_CD         $1.
         @00079 CLM_FREQ_CD                      $1.
         @00080 FI_NUM                           $5.
         @00085 CLM_MDCR_NON_PMT_RSN_CD          $2.
         @00087 CLM_PMT_AMT                       12.2
         @00099 NCH_PRMRY_PYR_CLM_PD_AMT          12.2
         @00111 NCH_PRMRY_PYR_CD                 $1.
         @00112 PRVDR_STATE_CD                   $2.
         @00114 ORG_NPI_NUM                      $10.
         @00124 SRVC_LOC_NPI_NUM                 $22.
         @00146 AT_PHYSN_UPIN                    $12.
         @00158 AT_PHYSN_NPI                     $12.
         @00170 AT_PHYSN_SPCLTY_CD               $2.
         @00172 OP_PHYSN_UPIN                    $12.
         @00184 OP_PHYSN_NPI                     $12.
         @00196 OP_PHYSN_SPCLTY_CD               $2.
         @00198 OT_PHYSN_UPIN                    $12.
         @00210 OT_PHYSN_NPI                     $12.
         @00222 OT_PHYSN_SPCLTY_CD               $2.
         @00224 RNDRNG_PHYSN_NPI                 $12.
         @00236 RNDRNG_PHYSN_SPCLTY_CD           $2.
         @00238 RFR_PHYSN_NPI                    $12.
         @00250 RFR_PHYSN_SPCLTY_CD              $2.
         @00252 CLM_MCO_PD_SW                    $1.
         @00253 PTNT_DSCHRG_STUS_CD              $2.
         @00255 CLM_TOT_CHRG_AMT                  12.2
         @00267 NCH_BENE_BLOOD_DDCTBL_LBLTY_AM    12.2
         @00279 NCH_PROFNL_CMPNT_CHRG_AMT         12.2
         @00291 PRNCPAL_DGNS_CD                  $7.
         @00298 ICD_DGNS_CD1                     $7.
         @00305 ICD_DGNS_CD2                     $7.
         @00312 ICD_DGNS_CD3                     $7.
         @00319 ICD_DGNS_CD4                     $7.
         @00326 ICD_DGNS_CD5                     $7.
         @00333 ICD_DGNS_CD6                     $7.
         @00340 ICD_DGNS_CD7                     $7.
         @00347 ICD_DGNS_CD8                     $7.
```

```
@00354 ICD_DGNS_CD9                  $7.
@00361 ICD_DGNS_CD10                 $7.
@00368 ICD_DGNS_CD11                 $7.
@00375 ICD_DGNS_CD12                 $7.
@00382 ICD_DGNS_CD13                 $7.
@00389 ICD_DGNS_CD14                 $7.
@00396 ICD_DGNS_CD15                 $7.
@00403 ICD_DGNS_CD16                 $7.
@00410 ICD_DGNS_CD17                 $7.
@00417 ICD_DGNS_CD18                 $7.
@00424 ICD_DGNS_CD19                 $7.
@00431 ICD_DGNS_CD20                 $7.
@00438 ICD_DGNS_CD21                 $7.
@00445 ICD_DGNS_CD22                 $7.
@00452 ICD_DGNS_CD23                 $7.
@00459 ICD_DGNS_CD24                 $7.
@00466 ICD_DGNS_CD25                 $7.
@00473 FST_DGNS_E_CD                 $7.
@00480 ICD_DGNS_E_CD1                $7.
@00487 ICD_DGNS_E_CD2                $7.
@00494 ICD_DGNS_E_CD3                $7.
@00501 ICD_DGNS_E_CD4                $7.
@00508 ICD_DGNS_E_CD5                $7.
@00515 ICD_DGNS_E_CD6                $7.
@00522 ICD_DGNS_E_CD7                $7.
@00529 ICD_DGNS_E_CD8                $7.
@00536 ICD_DGNS_E_CD9                $7.
@00543 ICD_DGNS_E_CD10               $7.
@00550 ICD_DGNS_E_CD11               $7.
@00557 ICD_DGNS_E_CD12               $7.
@00564 ICD_PRCDR_CD1                 $7.
@00571 PRCDR_DT1                     YYMMDD8.
@00579 ICD_PRCDR_CD2                 $7.
@00586 PRCDR_DT2                     YYMMDD8.
@00594 ICD_PRCDR_CD3                 $7.
@00601 PRCDR_DT3                     YYMMDD8.
@00609 ICD_PRCDR_CD4                 $7.
@00616 PRCDR_DT4                     YYMMDD8.
@00624 ICD_PRCDR_CD5                 $7.
@00631 PRCDR_DT5                     YYMMDD8.
@00639 ICD_PRCDR_CD6                 $7.
@00646 PRCDR_DT6                     YYMMDD8.
@00654 ICD_PRCDR_CD7                 $7.
@00661 PRCDR_DT7                     YYMMDD8.
@00669 ICD_PRCDR_CD8                 $7.
@00676 PRCDR_DT8                     YYMMDD8.
@00684 ICD_PRCDR_CD9                 $7.
@00691 PRCDR_DT9                     YYMMDD8.
@00699 ICD_PRCDR_CD10                $7.
@00706 PRCDR_DT10                    YYMMDD8.
@00714 ICD_PRCDR_CD11                $7.
@00721 PRCDR_DT11                    YYMMDD8.
@00729 ICD_PRCDR_CD12                $7.
@00736 PRCDR_DT12                    YYMMDD8.
@00744 ICD_PRCDR_CD13                $7.
@00751 PRCDR_DT13                    YYMMDD8.
@00759 ICD_PRCDR_CD14                $7.
@00766 PRCDR_DT14                    YYMMDD8.
@00774 ICD_PRCDR_CD15                $7.
@00781 PRCDR_DT15                    YYMMDD8.
@00789 ICD_PRCDR_CD16                $7.
```

```
        @00796 PRCDR_DT16                        YYMMDD8.
        @00804 ICD_PRCDR_CD17                    $7.
        @00811 PRCDR_DT17                        YYMMDD8.
        @00819 ICD_PRCDR_CD18                    $7.
        @00826 PRCDR_DT18                        YYMMDD8.
        @00834 ICD_PRCDR_CD19                    $7.
        @00841 PRCDR_DT19                        YYMMDD8.
        @00849 ICD_PRCDR_CD20                    $7.
        @00856 PRCDR_DT20                        YYMMDD8.
        @00864 ICD_PRCDR_CD21                    $7.
        @00871 PRCDR_DT21                        YYMMDD8.
        @00879 ICD_PRCDR_CD22                    $7.
        @00886 PRCDR_DT22                        YYMMDD8.
        @00894 ICD_PRCDR_CD23                    $7.
        @00901 PRCDR_DT23                        YYMMDD8.
        @00909 ICD_PRCDR_CD24                    $7.
        @00916 PRCDR_DT24                        YYMMDD8.
        @00924 ICD_PRCDR_CD25                    $7.
        @00931 PRCDR_DT25                        YYMMDD8.
        @00939 RSN_VISIT_CD1                     $7.
        @00946 RSN_VISIT_CD2                     $7.
        @00953 RSN_VISIT_CD3                     $7.
        @00960 NCH_BENE_PTB_DDCTBL_AMT           12.2
        @00972 NCH_BENE_PTB_COINSRNC_AMT         12.2
        @00984 CLM_OP_PRVDR_PMT_AMT              12.2
        @00996 CLM_OP_BENE_PMT_AMT               12.2
        @01008 DOB_DT                            YYMMDD8.
        @01016 GNDR_CD                           $1.
        @01017 BENE_RACE_CD                      $1.
        @01018 BENE_CNTY_CD                      $3.
        @01021 BENE_STATE_CD                     $2.
        @01023 BENE_MLG_CNTCT_ZIP_CD             $9.
        @01032 CLM_MDCL_REC                      $17.
        @01049 FI_CLM_ACTN_CD                    $1.
        @01050 NCH_BLOOD_PNTS_FRNSHD_QTY         3.
        @01053 CLM_TRTMT_AUTHRZTN_NUM            $18.
        @01071 CLM_PRCR_RTRN_CD                  $2.
        @01073 CLM_SRVC_FAC_ZIP_CD               $9.
        @01082 CLM_OP_TRANS_TYPE_CD              $1.
        @01083 CLM_OP_ESRD_MTHD_CD               $1.
        @01084 CLM_NEXT_GNRTN_ACO_IND_CD1        $1.
        @01085 CLM_NEXT_GNRTN_ACO_IND_CD2        $1.
        @01086 CLM_NEXT_GNRTN_ACO_IND_CD3        $1.
        @01087 CLM_NEXT_GNRTN_ACO_IND_CD4        $1.
        @01088 CLM_NEXT_GNRTN_ACO_IND_CD5        $1.
        @01089 ACO_ID_NUM                        $10.
        @01099 CLM_BENE_ID_TYPE_CD               $1.;


    * drop *;
/*
drop AT_PHYSN_UPIN
AT_PHYSN_NPI
AT_PHYSN_SPCLTY_CD
OP_PHYSN_UPIN
OP_PHYSN_NPI
OP_PHYSN_SPCLTY_CD
OT_PHYSN_UPIN
OT_PHYSN_NPI
OT_PHYSN_SPCLTY_CD
RNDRNG_PHYSN_NPI
```

RNDRNG_PHYSN_SPCLTY_CD
RFR_PHYSN_NPI
RFR_PHYSN_SPCLTY_CD
ICD_PRCDR_CD1
PRCDR_DT1
ICD_PRCDR_CD2
PRCDR_DT2
ICD_PRCDR_CD3
PRCDR_DT3
ICD_PRCDR_CD4
PRCDR_DT4
ICD_PRCDR_CD5
PRCDR_DT5
ICD_PRCDR_CD6
PRCDR_DT6
ICD_PRCDR_CD7
PRCDR_DT7
ICD_PRCDR_CD8
PRCDR_DT8
ICD_PRCDR_CD9
PRCDR_DT9
ICD_PRCDR_CD10
PRCDR_DT10
ICD_PRCDR_CD11
PRCDR_DT11
ICD_PRCDR_CD12
PRCDR_DT12
ICD_PRCDR_CD13
PRCDR_DT13
ICD_PRCDR_CD14
PRCDR_DT14
ICD_PRCDR_CD15
PRCDR_DT15
ICD_PRCDR_CD16
PRCDR_DT16
ICD_PRCDR_CD17
PRCDR_DT17
ICD_PRCDR_CD18
PRCDR_DT18
ICD_PRCDR_CD19
PRCDR_DT19
ICD_PRCDR_CD20
PRCDR_DT20
ICD_PRCDR_CD21
PRCDR_DT21
ICD_PRCDR_CD22
PRCDR_DT22
ICD_PRCDR_CD23
PRCDR_DT23
ICD_PRCDR_CD24
PRCDR_DT24
ICD_PRCDR_CD25
PRCDR_DT25
CLM_MDCL_REC
CLM_TRTMT_AUTHRZTN_NUM
CLM_PRCR_RTRN_CD
CLM_SRVC_FAC_ZIP_CD
CLM_OP_TRANS_TYPE_CD
CLM_OP_ESRD_MTHD_CD
CLM_NEXT_GNRTN_ACO_IND_CD1
CLM_NEXT_GNRTN_ACO_IND_CD2

```
CLM_NEXT_GNRTN_ACO_IND_CD3
CLM_NEXT_GNRTN_ACO_IND_CD4
CLM_NEXT_GNRTN_ACO_IND_CD5
ACO_ID_NUM
CLM_BENE_ID_TYPE_CD
ORG_NPI_NUM */
/*all missing*/
/*
FI_CLM_PROC_DT DOB_DT NCH_BLOOD_PNTS_FRNSHD_QTY PRVDR_NUM SRVC_LOC_NPI_NUM BENE_CNTY_CD
BENE_MLG_CNTCT_ZIP_CD BENE_RACE_CD BENE_STATE_CD
RSN_VISIT_CD1 RSN_VISIT_CD2 RSN_VISIT_CD3;
*/

* make year and source variables;
source = "outpatient_base_claims_k";
year = &year;

keep &opbaseclaimsvars source year;

run;

title 'OUTPATIENT BASE CLAIM FILE - VERSION K SAS Data Set for Researcher: 000021074';
proc contents data=ccw.outpatient_base_claims_k varnum;
proc print data=ccw.outpatient_base_claims_k (obs=10);
  title2 'Sample Listing - 10 Rows';
run;

proc means data=ccw.outpatient_base_claims_k;
  title2 'Simple Means';
run;

/*
proc freq data=ccw.outpatient_base_claims_k;
tables NCH_CLM_TYPE_CD CLAIM_QUERY_CODE CLM_FAC_TYPE_CD CLM_SRVC_CLSFCTN_TYPE_CD CLM_FREQ_CD
 FI_NUM CLM_MDCR_NON_PMT_RSN_CD NCH_PRMRY_PYR_CD PRVDR_STATE_CD CLM_MCO_PD_SW PTNT_DSCHRG_STUS_CD
 PRNCPAL_DGNS_CD ICD_DGNS_CD1 GNDR_CD FI_CLM_ACTN_CD;
run;
*/

/*Subset outpatient_base_claims by ED visits identified in revenue center file*/
/*Because the outpatient claims file is so large, the subsetting occurs 1 million records at a
time.*/
%macro merge1;
%do i=1 %to 12;
%let N1 = %eval(1000000*&i - 1000000);
%let N2 = %eval(1000000*&i);
%put &i &N1 &N2;
data test1;
set ccw.outpatient_base_claims_k;
if &N1 < _N_ <= &N2;
run;

proc sort data=test1; by BENE_ID CLM_ID;
data ccw.outpatient_claims_k_&i(label='OUTPATIENT CLAIM FILE - VERSION K');
merge test1 (in=a) ccw.outpatient_revenue_center_k (in=b);
by BENE_ID CLM_ID;
if a and b;
run;
%end;
%mend;
```

```
proc sort data=ccw.outpatient_revenue_center_k; by BENE_ID CLM_ID; run;
%merge1;

/*Stack the resulting files*/
data ccw.outpatient_ED_urgent_&year;
set ccw.outpatient_claims_k_1-ccw.outpatient_claims_k_12;
run;
/* proc contents data=ccw.outpatient_ED_urgent_2006; run; */
proc contents data=ccw.outpatient_ED_urgent_&year; run;
proc freq data=ccw.outpatient_ED_urgent_&year noprint;
tables BENE_ID*CLM_ID*CLM_LINE_NUM / out=test;
run;
/*BENE_ID, CLM_ID and CLM_LINE_NUM uniquely identify the rows.*/
proc freq data=ccw.outpatient_ED_urgent_&year noprint;
tables BENE_ID*CLM_ID/ out=test;
run;
proc means data=test; run;
/*BENE_ID and CLM_ID do not uniquely identify the rows, with up to 20 rows with identical values
but a mean of 1.5.*/

proc means data=ccw.outpatient_ED_urgent_&year; run;

/*
proc freq data=ccw.outpatient_ED_urgent_&year;
tables BENE_CNTY_CD BENE_MLG_CNTCT_ZIP_CD BENE_RACE_CD BENE_STATE_CD ORG_NPI_NUM SRVC_LOC_NPI_NUM;
run;
*/

/*
proc freq data=ccw.outpatient_ED_urgent_2006;
tables BENE_CNTY_CD BENE_MLG_CNTCT_ZIP_CD BENE_RACE_CD BENE_STATE_CD ORG_NPI_NUM SRVC_LOC_NPI_NUM;
run;

proc contents data=ccw.outpatient_ED_urgent_2006; run;
*/

/*Remove the massive files no longer needed*/
proc datasets lib=ccw;
delete outpatient_claims_k_1-outpatient_claims_k_12 outpatient_base_claims_k
outpatient_revenue_center_k;
run; quit;


* End of Program *;
```

```
* Log/List Options *;
options ls=120 ps=42 missing=' ' nocenter validvarname=upcase compress=binary;
*options work='e:\temp';

* Output SAS Library *;
libname mbsflib1 'T:\Data Management\CMS Data\DUA 51193\6925';
libname mbsflib2 'T:\Data Management\CMS Data\DUA 52573\8402';
libname xwlklib 'T:\Data Management\CMS Data\DUA 52573\8512';
libname medprlib 'T:\Data Management\CMS Data\DUA 21521';
libname edurglib 'T:\Data Management\CMS Data\DUA 52573\8511';

proc contents data=medprlib.medpar&year position;
title "contents of medprlib.medpar&year";
run;

/*
proc freq data=medprlib.medpar&year;
tables DGNS_POA_CD;
run;
*/
/*
proc contents data=medprlib.medpar2013 position; run;
*/

* list of medpar variables to keep ;
*%LET medparvars = BENE_ID BENE_ID_16701 MEDPAR_ID MEDPAR_YR_NUM NCH_CLM_TYPE_CD BENE_IDENT_CD
EQTBL_BIC_CD BENE_AGE_CNT BENE_SEX_CD BENE_RACE_CD BENE_MDCR_STUS_CD BENE_RSDNC_SSA_STATE_CD
BENE_RSDNC_SSA_CNTY_CD BENE_MLG_CNTCT_ZIP_CD BENE_DSCHRG_STUS_CD IP_ADMSN_TYPE_CD ADMSN_DT
DSCHRG_DT BENE_DEATH_DT BENE_DEATH_DT_VRFY_CD ER_CHRG_AMT DGNS_1_CD DGNS_2_CD DGNS_3_CD DGNS_4_CD
DGNS_5_CD DGNS_6_CD DGNS_7_CD DGNS_8_CD DGNS_9_CD DGNS_10_CD DGNS_11_CD DGNS_12_CD DGNS_13_CD
DGNS_14_CD DGNS_15_CD DGNS_16_CD DGNS_17_CD DGNS_18_CD DGNS_19_CD DGNS_20_CD DGNS_21_CD DGNS_22_CD
DGNS_23_CD DGNS_24_CD DGNS_25_CD DGNS_POA_CD POA_DGNS_CD_CNT POA_DGNS_1_IND_CD POA_DGNS_2_IND_CD
POA_DGNS_3_IND_CD POA_DGNS_4_IND_CD POA_DGNS_5_IND_CD POA_DGNS_6_IND_CD POA_DGNS_7_IND_CD
POA_DGNS_8_IND_CD POA_DGNS_9_IND_CD POA_DGNS_10_IND_CD POA_DGNS_11_IND_CD POA_DGNS_12_IND_CD
POA_DGNS_13_IND_CD POA_DGNS_14_IND_CD POA_DGNS_15_IND_CD POA_DGNS_16_IND_CD POA_DGNS_17_IND_CD
POA_DGNS_18_IND_CD POA_DGNS_19_IND_CD POA_DGNS_20_IND_CD POA_DGNS_21_IND_CD POA_DGNS_22_IND_CD
POA_DGNS_23_IND_CD POA_DGNS_24_IND_CD POA_DGNS_25_IND_CD DGNS_E_1_CD DGNS_E_2_CD DGNS_E_3_CD
DGNS_E_4_CD DGNS_E_5_CD DGNS_E_6_CD DGNS_E_7_CD DGNS_E_8_CD DGNS_E_9_CD DGNS_E_10_CD DGNS_E_11_CD
DGNS_E_12_CD POA_DGNS_E_CD_CNT POA_DGNS_E_1_IND_CD POA_DGNS_E_2_IND_CD POA_DGNS_E_3_IND_CD
POA_DGNS_E_4_IND_CD POA_DGNS_E_5_IND_CD POA_DGNS_E_6_IND_CD POA_DGNS_E_7_IND_CD
POA_DGNS_E_8_IND_CD POA_DGNS_E_9_IND_CD POA_DGNS_E_10_IND_CD POA_DGNS_E_11_IND_CD
POA_DGNS_E_12_IND_CD;
%let medparvars =
        BENE_ID
        BENE_ID_16701
        MEDPAR_ID
        MEDPAR_YR_NUM
        NCH_CLM_TYPE_CD
        BENE_IDENT_CD
        EQTBL_BIC_CD
        BENE_AGE_CNT
        BENE_SEX_CD
        BENE_RACE_CD
        BENE_MDCR_STUS_CD
        BENE_RSDNC_SSA_STATE_CD
        BENE_RSDNC_SSA_CNTY_CD
        BENE_MLG_CNTCT_ZIP_CD
        BENE_DSCHRG_STUS_CD
```

```
IP_ADMSN_TYPE_CD
ADMSN_DT
DSCHRG_DT
BENE_DEATH_DT
BENE_DEATH_DT_VRFY_CD
ER_CHRG_AMT
DGNS_1_CD
DGNS_2_CD
DGNS_3_CD
DGNS_4_CD
DGNS_5_CD
DGNS_6_CD
DGNS_7_CD
DGNS_8_CD
DGNS_9_CD
DGNS_10_CD
DGNS_11_CD
DGNS_12_CD
DGNS_13_CD
DGNS_14_CD
DGNS_15_CD
DGNS_16_CD
DGNS_17_CD
DGNS_18_CD
DGNS_19_CD
DGNS_20_CD
DGNS_21_CD
DGNS_22_CD
DGNS_23_CD
DGNS_24_CD
DGNS_25_CD
DGNS_POA_CD
POA_DGNS_CD_CNT
POA_DGNS_1_IND_CD
POA_DGNS_2_IND_CD
POA_DGNS_3_IND_CD
POA_DGNS_4_IND_CD
POA_DGNS_5_IND_CD
POA_DGNS_6_IND_CD
POA_DGNS_7_IND_CD
POA_DGNS_8_IND_CD
POA_DGNS_9_IND_CD
POA_DGNS_10_IND_CD
POA_DGNS_11_IND_CD
POA_DGNS_12_IND_CD
POA_DGNS_13_IND_CD
POA_DGNS_14_IND_CD
POA_DGNS_15_IND_CD
POA_DGNS_16_IND_CD
POA_DGNS_17_IND_CD
POA_DGNS_18_IND_CD
POA_DGNS_19_IND_CD
POA_DGNS_20_IND_CD
POA_DGNS_21_IND_CD
POA_DGNS_22_IND_CD
POA_DGNS_23_IND_CD
POA_DGNS_24_IND_CD
POA_DGNS_25_IND_CD
DGNS_E_1_CD
DGNS_E_2_CD
DGNS_E_3_CD
```

```
            DGNS_E_4_CD
            DGNS_E_5_CD
            DGNS_E_6_CD
            DGNS_E_7_CD
            DGNS_E_8_CD
            DGNS_E_9_CD
            DGNS_E_10_CD
            DGNS_E_11_CD
            DGNS_E_12_CD
            POA_DGNS_E_CD_CNT
            POA_DGNS_E_1_IND_CD
            POA_DGNS_E_2_IND_CD
            POA_DGNS_E_3_IND_CD
            POA_DGNS_E_4_IND_CD
            POA_DGNS_E_5_IND_CD
            POA_DGNS_E_6_IND_CD
            POA_DGNS_E_7_IND_CD
            POA_DGNS_E_8_IND_CD
            POA_DGNS_E_9_IND_CD
            POA_DGNS_E_10_IND_CD
            POA_DGNS_E_11_IND_CD
            POA_DGNS_E_12_IND_CD;

proc contents data=edurglib.outpatient_ed_urgent_&year position;
run;

/*
proc freq data=medprlib.medpar&year;
tables BENE_MDCR_STUS_CD /missprint;
run;

proc freq data=medprlib.medpar&year;
tables ER_CHRG_AMT /missprint;
run;

proc freq data=medprlib.medpar&year;
tables OP_SRVC_IND_CD /missprint;
run;

proc freq data=medprlib.medpar&year;
tables DGNS_1_CD--DGNS_10_CD /missprint;
run;
*/

* 2006 dates are wonky;
%macro fix_date_vars;
      %if &year=2006 %then %do;
      data medprlib.medpar&year;
            set medprlib.medpar&year;
            * 2006 dates are wonky;
            admsndt_dayofyear_str = substr(ADMSNDT,5,3);
            admsndt_dayofyear = input(admsndt_dayofyear_str, 3.);

            admsndt_year_str = substr(ADMSNDT,1,4);
            admsndt_year = input(admsndt_year_str, 4.);

            startdate_str = cats('01jan',admsndt_year_str);
            startdate = input(startdate_str,date9.);

            ADMSN_DT = intnx('day', startdate, admsndt_dayofyear-1, 'same');
```

```
          * DSCHRGDT ;
          dschrgdt_dayofyear_str = substr(DSCHRGDT,5,3);
          dschrgdt_dayofyear = input(dschrgdt_dayofyear_str, 3.);

          dschrgdt_year_str = substr(DSCHRGDT,1,4);
          dschrgdt_year = input(dschrgdt_year_str, 4.);

          ds_startdate_str = cats('01jan',dschrgdt_year_str);
          ds_startdate = input(ds_startdate_str,date9.);

          DSCHRG_DT = intnx('day', ds_startdate, dschrgdt_dayofyear-1, 'same');
          if DSCHRGDT EQ '0000000' then DSCHRG_DT = .;
          else DSCHRG_DT = DSCHRG_DT;

          format ADMSN_DT DATE9.
                    DSCHRG_DT DATE9.;

      run;

      proc freq data=medprlib.medpar&year;
          tables ADMSNDT*ADMSN_DT dschrgdt*DSCHRG_DT /missprint list;
          title 'Check revised 2006 dates';
      run;
      %end;
%mend;
%fix_date_vars;


proc freq data=medprlib.medpar&year;
tables BENE_RSDNC_SSA_STATE_CD BENE_RSDNC_SSA_CNTY_CD /missprint;
title "State and county SSA codes in medprlib.medpar&year";
run;

* identify er visits where er_chrg_amt > 0 ;
data medprlib.medpar&year._rev;
      set medprlib.medpar&year;

      * keep only er visits;
      * 12/9/20190 - keep all per meeting
      * if ER_CHRG_AMT > 0;

      * make year and source variables;
      source = "medpar&year._rev";
      year = &year;

      * some variables changed names in 2013 ;
      if year in (2006, 2013) then BENE_RSDNC_SSA_STATE_CD = STATE_CD;
      else BENE_RSDNC_SSA_STATE_CD = BENE_RSDNC_SSA_STATE_CD;

      if year in (2006, 2013) then BENE_RSDNC_SSA_CNTY_CD = CNTY_CD;
      else BENE_RSDNC_SSA_STATE_CD = BENE_RSDNC_SSA_STATE_CD;

      if year in (2006, 2013) then BENE_SEX_CD = SEX;
      else BENE_SEX_CD = BENE_SEX_CD;

      if year in (2006, 2013) then DGNS_1_CD = DGNS_CD01;
      else DGNS_1_CD = DGNS_1_CD;

      if year in (2006, 2013) then DGNS_2_CD = DGNS_CD02;
      else DGNS_2_CD = DGNS_2_CD;
```

```
if year in (2006, 2013) then DGNS_3_CD = DGNS_CD03;
else DGNS_3_CD = DGNS_3_CD;

if year in (2006, 2013) then DGNS_4_CD = DGNS_CD04;
else DGNS_4_CD = DGNS_4_CD;

if year in (2006, 2013) then DGNS_5_CD = DGNS_CD05;
else DGNS_5_CD = DGNS_5_CD;

if year in (2006, 2013) then DGNS_6_CD = DGNS_CD06;
else DGNS_6_CD = DGNS_6_CD;

if year in (2006, 2013) then DGNS_7_CD = DGNS_CD07;
else DGNS_7_CD = DGNS_7_CD;

if year in (2006, 2013) then DGNS_8_CD = DGNS_CD08;
else DGNS_8_CD = DGNS_8_CD;

if year in (2006, 2013) then DGNS_9_CD = DGNS_CD09;
else DGNS_9_CD = DGNS_9_CD;

if year in (2006, 2013) then DGNS_10_CD = DGNS_CD10;
else DGNS_10_CD = DGNS_10_CD;

* 2/28/2020 - date vars are different in 2006 and 2013;
if year in (2013) then ADMSN_DT = ADMDTE;
else ADMSN_DT = ADMSN_DT;

if year in (2013) then DSCHRG_DT = DISCHDTE;
else DSCHRG_DT = DSCHRG_DT;

* make versions that match op claims data for stacking;
CLM_FROM_DT = ADMSN_DT;
CLM_THRU_DT = DSCHRG_DT;

GNDR_CD = BENE_SEX_CD;

BENE_STATE_CD = BENE_RSDNC_SSA_STATE_CD;
BENE_CNTY_CD = BENE_RSDNC_SSA_CNTY_CD;

* make SSA code for XWALK;
SSA = CAT(BENE_STATE_CD, BENE_CNTY_CD);

* 3/15/2023 - ER_CHRG_AMT is ER_AMT in 2006 and 2013;
if year in (2006, 2013) then ER_CHRG_AMT = ER_AMT;
else ER_CHRG_AMT = ER_CHRG_AMT;

ICD_DGNS_CD1 = DGNS_1_CD;
ICD_DGNS_CD2 = DGNS_2_CD;
ICD_DGNS_CD3 = DGNS_3_CD;
ICD_DGNS_CD4 = DGNS_4_CD;
ICD_DGNS_CD5 = DGNS_5_CD;
ICD_DGNS_CD6 = DGNS_6_CD;
ICD_DGNS_CD7 = DGNS_7_CD;
ICD_DGNS_CD8 = DGNS_8_CD;
ICD_DGNS_CD9 = DGNS_9_CD;
ICD_DGNS_CD10 = DGNS_10_CD;

* keep selected vars ;
```

```sas
        keep &medparvars CLM_FROM_DT CLM_THRU_DT GNDR_CD BENE_STATE_CD BENE_CNTY_CD SSA ER_CHRG_AMT
ICD_DGNS_CD1 ICD_DGNS_CD2 ICD_DGNS_CD3 ICD_DGNS_CD4 ICD_DGNS_CD5 ICD_DGNS_CD6 ICD_DGNS_CD7
ICD_DGNS_CD8 ICD_DGNS_CD9 ICD_DGNS_CD10 source year;

run;

* sort for merge with SSA FIPS xwalk;
proc sort data=medprlib.medpar&year._rev tagsort;
by SSA;
run;

* merge in SSA, FIPS XWALK ;
data medprlib.medpar&year._rev_fips;
merge medprlib.medpar&year._rev (in=a) XWLKLIB.SSA_FIPS_XWALK_&year (in=b);
by SSA;
if a;
run;

proc freq data=medprlib.medpar&year._rev_fips;
tables FIPS /missprint;
run;

data medprlib.medpar&year._rev_sub;
        set medprlib.medpar&year._rev_fips;

        * 12/17/2019 - Keep only MI, OH, PA records ;
        *if BENE_RSDNC_SSA_STATE_CD in ("23", "36", "39");

        * 1/14/2020 - Use the subset of counties from request file;
        *STCOFIPS = CAT(BENE_RSDNC_SSA_STATE_CD, BENE_RSDNC_SSA_CNTY_CD);
        if FIPS IN
                ('26081','26163','39035','39049','39061','39095','39153','26001','26003','26005',
                '26007','26009','26011','26013','26015','26017','26019',
                '26021','26023','26025','26027','26029','26031','26033','26035','26037','26039',
                '26041','26043','26045','26047','26049','26051','26053','26055','26057','26059',
                '26061','26063','26065','26067','26069','26071','26073','26075','26077','26079',
                '26083','26085','26087','26089','26091','26093','26095','26097','26099','26101',
                '26103','26105','26107','26109','26111','26113','26115','26117','26119','26121',
                '26123','26125','26127','26129','26131','26133','26135','26137','26139','26141',
                '26143','26145','26147','26149','26151','26153','26155','26157','26159','26161',
                '26165','39017','39093','39099','39113','39151','42003','42011','42045','42069',
                '42071','42079','42091','42101','42129','42133');

                drop MSA_1-MSA_21;
run;

proc freq data=medprlib.medpar&year._rev_sub;
tables FIPS SSA /missprint;
run;

proc sort data=medprlib.medpar&year._rev_sub tagsort;
by bene_id;
run;

proc contents data=medprlib.medpar&year._rev_sub position;
run;

/*
proc freq data=medprlib.medpar&year_er;
    tables ER_CHRG_AMT /missprint;
run;
```

```
*/
/*
proc freq data=medprlib.medpar&year_er nlevels noprint;
* save values of unique ID ;
tables bene_id /
   out=unique_bene_id (where=(count=1));
run;
*/
/*
proc sort data=medprlib.medpar&year_er nodupkey tagsort;
by bene_id;
run;
*/
```

```
* Log/List Options *;
options ls=120 ps=42 missing=' ' nocenter validvarname=upcase compress=binary;
* options work='e:\temp';

* Output SAS Library *;
libname mbsflib1 'T:\Data Management\CMS Data\DUA 51193\6925';
libname mbsflib2 'T:\Data Management\CMS Data\DUA 52573\8402';

libname xwlklib 'T:\Data Management\CMS Data\DUA 52573\8512';




proc contents data=mbsflib1.mbsf_cc_summary_&year; run;
proc contents data=mbsflib2.mbsf_cc_summary_&year; run;

data work.bene_bene_xwalk;
      set xwlklib.bene_bene_xwalk;
      * copy bene_id for merging;
      bene_id = bene_id_51193;
run;

proc sort data=work.bene_bene_xwalk;
      by bene_id;
run;

************************** cc *****************************;

* merge mbsf cc with bene_id crosswalk;
proc sort data=mbsflib1.mbsf_cc_summary_&year;
      by bene_id;
run;

data mbsflib1.mbsf_cc_summary_&year._51193;
merge mbsflib1.mbsf_cc_summary_&year (in=a) work.bene_bene_xwalk (in=b);
by bene_id;
if a;
run;

* need bene_id to be bene_id_21074 to merge with the other (ccw) data sets;
data mbsflib1.mbsf_cc_summary_&year._51193;
      set mbsflib1.mbsf_cc_summary_&year._51193;
      bene_id = bene_id_21074;

      * add source and year vars;
      mbsf_source = "mbsf_cc_summary_&year_51193";
      year = &year;
run;

* stack the two mbsf cc's;
data work.stack_mbsf_cc_summary_&year;
      set mbsflib1.mbsf_cc_summary_&year._51193 mbsflib2.mbsf_cc_summary_&year;

      * add source and year vars;
      if mbsf_source = "" then mbsf_source = "mbsf_cc_summary_&year";
      year = &year;
run;

proc contents data=work.stack_mbsf_cc_summary_&year; run;
```

```
*************************** end cc ***************************;

*************************** oth cc ***************************;

* merge mbsf oth_cc with bene_id crosswalk;
proc sort data=mbsflib1.mbsf_oth_cc_summary_&year;
      by bene_id;
run;

data mbsflib1.mbsf_oth_cc_summary_&year._51193;
merge mbsflib1.mbsf_oth_cc_summary_&year (in=a) work.bene_bene_xwalk (in=b);
by bene_id;
if a;
run;

* need bene_id to be bene_id_21074 to merge with the other (oth_ccw) data sets;
data mbsflib1.mbsf_oth_cc_summary_&year._51193;
      set mbsflib1.mbsf_oth_cc_summary_&year._51193;
      bene_id = bene_id_21074;

      * add source and year vars;
      mbsf_source = "mbsf_oth_cc_summary_&year_51193";
      year = &year;
run;

* stack the two mbsf oth_cc's;
data work.stack_mbsf_oth_cc_summary_&year;
      set mbsflib1.mbsf_oth_cc_summary_&year._51193 mbsflib2.mbsf_oth_cc_summary_&year;

      * add source and year vars;
      if mbsf_source = "" then mbsf_source = "mbsf_oth_cc_summary_&year";
      year = &year;
run;

proc contents data=work.stack_mbsf_oth_cc_summary_&year; run;

*************************** end cc ***************************;

*************************** abcd ***************************;

* merge mbsf abcd with bene_id crosswalk;
proc sort data=mbsflib1.mbsf_abcd_summary_&year;
      by bene_id;
run;

data mbsflib1.mbsf_abcd_summary_&year._51193;
merge mbsflib1.mbsf_abcd_summary_&year (in=a) work.bene_bene_xwalk (in=b);
by bene_id;
if a;
run;

* need bene_id to be bene_id_21074 to merge with the other (abcdw) data sets;
data mbsflib1.mbsf_abcd_summary_&year._51193;
      set mbsflib1.mbsf_abcd_summary_&year._51193;
      bene_id = bene_id_21074;

      * add source and year vars;
      mbsf_source = "mbsf_abcd_summary_&year._51193";
      year = &year;
```

```
run;

* stack the two mbsf abcd's;
data work.stack_mbsf_abcd_summary_&year;
      set mbsflib1.mbsf_abcd_summary_&year._51193 mbsflib2.mbsf_abcd_summary_&year;

      * add source and year vars;
      if mbsf_source = "" then mbsf_source = "mbsf_abcd_summary_&year";
      year = &year;

run;

proc contents data=work.stack_mbsf_abcd_summary_&year; run;

************************* end abcd ***************************;

***************** merge all mbsf files together ****************;
* make a sas dataset, would not sort in work ;
data mbsflib1.stack_mbsf_cc_summary_&year;
      set work.stack_mbsf_cc_summary_&year;
run;

* sort data for merge ;
proc sort data=mbsflib1.stack_mbsf_cc_summary_&year;
      by bene_id;
run;

* make a sas dataset, would not sort in work ;
data mbsflib1.stack_mbsf_oth_cc_summary_&year;
      set work.stack_mbsf_oth_cc_summary_&year;
run;

* sort data for merge ;
proc sort data=mbsflib1.stack_mbsf_oth_cc_summary_&year;
      by bene_id;
run;

* make a sas dataset, would not sort in work ;
data mbsflib1.stack_mbsf_abcd_summary_&year;
      set work.stack_mbsf_abcd_summary_&year;
run;

* sort data for merge ;
proc sort data=mbsflib1.stack_mbsf_abcd_summary_&year tagsort;
      by bene_id;
run;

* merge all 3;
data mbsflib1.mbsf_merged_summary_&year;
merge mbsflib1.stack_mbsf_cc_summary_&year mbsflib1.stack_mbsf_oth_cc_summary_&year
mbsflib1.stack_mbsf_abcd_summary_&year;
by bene_id;

*source = "mbsf_merged_summary_&year";

run;

proc contents data=mbsflib1.mbsf_merged_summary_&year position; run;
```

```
/************** scratch ***************
* check missing on new bene_id ;
data work.mbsf_cc_summary_&year_51193_check;
      set mbsflib1.mbsf_cc_summary_&year_51193;
      notmiss_bene_id_51193 = (not missing(bene_id_51193));
      notmiss_bene_id_21074 = (not missing(bene_id_21074));
run;

proc freq data=work.mbsf_cc_summary_&year_51193_check;
      tables notmiss_bene_id_51193 notmiss_bene_id_21074 /missprint;
run;

* no missing in &year;
******************************************/
```

- Please note that this program needs to run only after all previous programs have run.

```
* Log/List Options *;
options ls=120 ps=42 missing=' ' nocenter validvarname=upcase compress=binary;
*options work='e:\temp';

* Output SAS Library *;
libname mbsflib1 'T:\Data Management\CMS Data\DUA 51193\6925';
libname mbsflib2 'T:\Data Management\CMS Data\DUA 52573\8402';
libname xwlklib 'T:\Data Management\CMS Data\DUA 52573\8512';
libname medprlib 'T:\Data Management\CMS Data\DUA 21521';
libname edurglib 'T:\Data Management\CMS Data\DUA 52573\8511';

*proc contents data=medprlib.medpar&year position;
*run;

*proc contents data=edurglib.outpatient_ed_urgent_&year position;
*run;

* stack outpatient claims and medpar claims;
data edurglib.stack_op_ed_urg_medpar_rev_&year;
      set edurglib.outpatient_ed_urgent_&year medprlib.medpar&year._rev_sub;
run;

* sort data for merge ;
proc sort data=edurglib.stack_op_ed_urg_medpar_rev_&year tagsort;
      by bene_id;
run;

* 12/9/2019 ;
* make mbsf master ;
* not all MBSF records will have claims, but all claims should link to MBSF;

* merge in msbf ;
data outlib.opedurg_medparer_merge_mbsf_&year;
merge mbsflib1.mbsf_merged_summary_&year (in=a) edurglib.stack_op_ed_urg_medpar_rev_&year (in=b);
by bene_id;
if a;
run;

* test merge with claims as master ;
* merge in msbf ;
data edurglib.opedurg_medparer_mastr_mbsf_&year;
merge edurglib.stack_op_ed_urg_medpar_rev_&year (in=a) mbsflib1.mbsf_merged_summary_&year (in=b);
by bene_id;
if a;
run;

/*
* merge in msbf ;
data edurglib.opedurg_medparer_njoin_mbsf_&year;
merge edurglib.stack_op_ed_urg_medpar_rev_&year (in=a) mbsflib1.mbsf_merged_summary_&year (in=b);
by bene_id;
if a and b;
run;
*/

proc contents data=edurglib.stack_op_ed_urg_medpar_rev_&year position;
```

```
run;

proc contents data=mbsflib1.mbsf_merged_summary_&year position;
run;

proc contents data=outlib.opedurg_medparer_merge_mbsf_&year position;
run;

proc freq data=edurglib.opedurg_medparer_mastr_mbsf_&year;
tables ICD_DGNS_CD1 /list missing missprint;
title "Check first ICD code: ICD_DGNS_CD1 (master=claims)";
run;

proc freq data=edurglib.opedurg_medparer_mastr_mbsf_&year;
tables SOURCE*BENE_ENROLLMT_REF_YR /list missing missprint;
title "Check MBSF merge year and source in opedurg_medparer_mastr_mbsf_&year";
run;
```

```
/* make a file with beneid, event date, zip code, zcta and coordinates */
* Log/List Options *;
options ls=120 ps=42 missing=' ' nocenter validvarname=upcase compress=binary;
*options work='e:\temp';

* Output SAS Library *;
libname mbsflib1 'T:\Data Management\CMS Data\DUA 51193\6925';
libname mbsflib2 'T:\Data Management\CMS Data\DUA 52573\8402';
libname xwlklib 'T:\Data Management\CMS Data\DUA 52573\8512';
libname zxwlklib 'T:\Data Management\zipzctaxwalks';
libname medprlib 'T:\Data Management\CMS Data\DUA 21521';
libname edurglib 'T:\Data Management\CMS Data\DUA 52573\8511';
libname outlib 'T:\Data Management\CMS Data\datasets';

* set script directory ;
%let scriptdir = "T:\Data Management\scripts";

* set year parameter ;
%let year = 2006;

proc sort data=outlib.opedurg_medparer_merge_mbsf_&year tagsort;
by ZIP_CD;
run;

proc sort data=zxwlklib.zip_to_zcta2019;
by ZIP_CODE;
run;

* merge in zip code / zcta 2019 ;
data work.op_medparer_mastr_mbsf_zxlk_&year;
merge outlib.opedurg_medparer_merge_mbsf_&year (in=a) zxwlklib.zip_to_zcta2019 (in=b
rename=(ZIP_CODE=ZIP_CD));;
by ZIP_CD;
if a;
run;

proc freq data=work.op_medparer_mastr_mbsf_zxlk_&year;
tables ZIP_CD*ZCTA /list missprint;
run;

proc freq data=work.op_medparer_mastr_mbsf_zxlk_&year;
tables ZCTA /list missprint;
run;

* merge in zcta population weighted centroids;
** sort master by zcta;
proc sort data=work.op_medparer_mastr_mbsf_zxlk_&year tagsort;
by ZCTA;
run;

* merge in zcta;
data work.op_medparer_mastr_mbsf_zcta_&year;
merge work.op_medparer_mastr_mbsf_zxlk_&year (in=a) zxwlklib.zcta_popwgtcentroids (in=b);
by ZCTA;
if a;
run;

* make a subset ;
```

```
data outlib.beneid_dates_zcta_coords_&year;
set work.op_medparer_mastr_mbsf_zcta_&year;
keep BENE_ID YEAR ADMSN_DT DSCHRG_DT CLM_FROM_DT CLM_THRU_DT ZIP_CD ZCTA POINT_X POINT_Y;
run;

proc sort data=outlib.beneid_dates_zcta_coords_&year tagsort;
by BENE_ID ADMSN_DT CLM_FROM_DT;
run;

proc means data=outlib.beneid_dates_zcta_coords_&year;
var POINT_X POINT_Y ADMSN_DT DSCHRG_DT CLM_FROM_DT CLM_THRU_DT;
title "Check N's";
run;
```