

Predicting Managed Care Hospital Discharges and Bed Days

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Local areas which have a high predominance of managed care organizations have lower health care cost and mortality rates. For traditional or other health care organizations, managed care offers a standard of excellence for comparisons. To accomplish these comparisons, we derived hospital utilization rates (i.e., the number of discharges and bed days per 1,000 individuals by age, gender and clinical service or physician speciality) from one Health Maintenance Organization's (HMO) insurance claims using MVS SAS.

We then placed these utilization rates in a SAS AF model to predict the number of discharges and bed days that local area populations would generate. These predictions give health policy makers comparative information on how their local population would generate hospital workload in a managed care environment. For example, your local area population, a fee-for-service area, generates 25 discharges and 100 bed days in neurosurgery per month. You want to compare this to how many discharges and bed days your local population would generate under managed care. If the number of discharges and bed days under managed care is much lower, this might indicate that the local physicians are hospitalizing individuals that could be treated on an ambulatory basis, i.e., without hospitalization --- a lower cost alternative.

Deriving Utilization Rates using MVS SAS:

Insurance claims are by cost. Each activity which generates a hospital charge is captured in a single record. Each hospital admission has multiple records, the number varying according to the length of stay and the severity of illness of the patient. Each record has the cost, the diagnosis codes and the procedure codes. Diagnosis codes indicate why the patient is sick, while procedure codes indicate what was medically done to the patient. For example, diagnosis code 812 indicates "fracture of humerus" and procedure code 29358 indicates "application of long leg cast".

We planned to combine each admission into a single discharge record, add a Diagnosis Related Group (DRG) to each record using a grouper program; and then use the DRG to map to a physician speciality. Our first challenge was to combine the cost records, which varied widely in number, into individual discharge records for each patient. We needed to do this in order to use the DRG grouper program. We sorted and combined the cost records by patient identification number, admission date, and discharge date. We captured up to five clinical diagnoses and up to three clinical procedures (whose number and position varied on each record) in arrays, placing the primary diagnosis and procedure in the first positions of the arrays. This created one discharge record per admission.

Exhibit 1 displays examples of insurance claims associated with one hospital stay and Exhibit 2 is the resulting hospital discharge record. Exhibit 3 is the SAS program which read the cost records and converted them to individual discharge records.

There are approximately 9,000 clinical diagnosis codes (international classification of disease, version 9, clinical modification, ICD-9-CM) and 4,000 clinical procedure codes. Any combination of these codes was possible on the created discharge records. The discharge records were written to a flat file and passed to a grouper program which uses the diagnosis and procedure codes to place one of approximately 500 DRG codes onto each record. This reduced the number of codes and gave us a working discharge record.

Next we mapped the DRG on the discharge record to a clinical service (type of hospital ward or physician speciality). We made the physician speciality or clinical service maps by using previously processed discharge records which contained both a DRG and a clinical service code. DRGs are usually found in many different clinical services. We wanted to create a simple map, so we limited each DRG to the top five clinical services. For example, DRG 001--- Craniotomy, age greater than 17 except for trauma --- was found approximately 80% in neurosurgery, 6.4% in internal medicine, 6.0% in surgical intensive care, 5.3% in neurology and 1.9% in medical intensive care. Due to the differences in age and gender, we created three maps:

1. Individuals less than 17 years old: this map had a high percentage of pediatrics,
2. Females older than 17 years: this map had a high percentage of obstetrics,
3. Males older than 17 years.

Exhibit 4 includes excerpts from the SAS program which created the maps. Exhibit 5 is an example of a SAS data set of a map.

We applied our DRG-to-clinical service maps to the discharge records and derived the number of discharges and bed days in each clinical service by age and gender. Exhibit 6 includes excerpts from this SAS program. We added age and gender to the hospital discharge records by match-merging the membership records by patient identification.

We made utilization rates by match-merging the discharge records and membership population (which we had summed by age and gender) and calculating a rate per 1,000 individuals by age and gender. Exhibit 7 includes excerpts from this SAS program.

Predicting Discharges and Bed Days using SAS AF:

Using SAS AF, DOS version 6.04, we made a user input screen, which allowed users to input and edit different population files. Figure 2 displays the input screen. Exhibit 8 is the AF/SCL program which controls the user screen. Exhibit 9 is the SAS program called from AF (% INCLUDE) that applies the utilization rates to user populations to predict discharges and bed days.

When the user submits his population by pressing F10, the utilization rates are employed to calculate the discharges and bed days for the population. Exhibit 10 displays an example of a user population and the output which the user may print or browse.

Figure 1 OVERVIEW

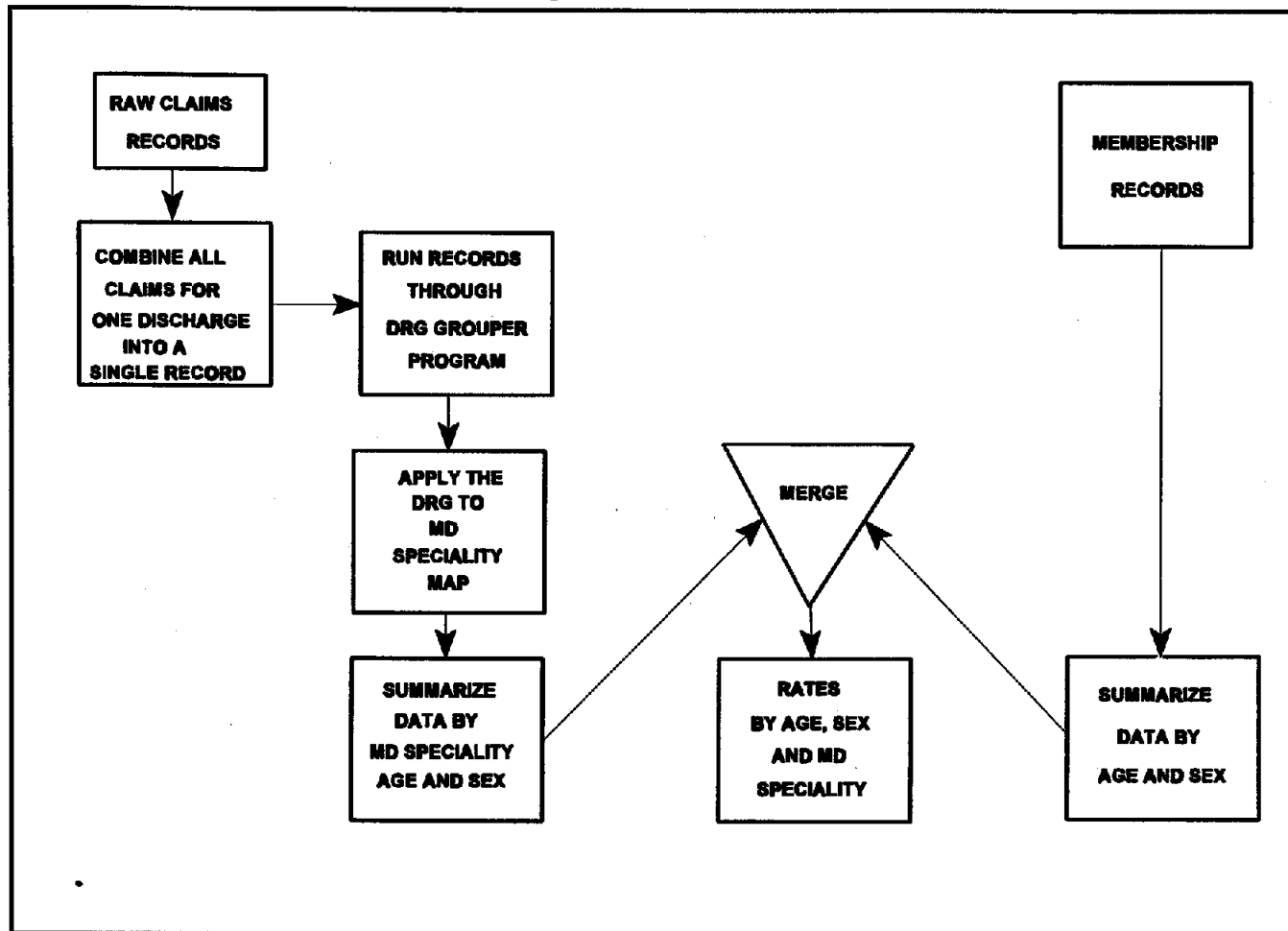


EXHIBIT 1: INPUT RECORDS (Insurance Claims Records)

		A	D														
G		D	C													A	E
E		M	H													M	L
O		D	D									P	D			T	G
L		A	A	D	D	D	D	D	C	C	C	H	I			C	E
O	I	T	T	X	X	X	X	X	P	P	P	Y	S			L	X
C	D	E	E	1	2	3	4	5	1	2	3	S	P			M	P
3	138108	11476	11480	6201	V433							29	02			88.50	88.50
3	138108	11476	11480	6201	V433							29	02			577.70	577.70
3	138108	11476	11480	6201	V433							29	02			895.00	895.00
3	138108	11476	11480	7893					4513	8801	3893	29	99			50.00	50.00
3	138108	11476	11480	7893					4513	8801	3893	29	99			36.00	36.00

EXHIBIT 2: OUTPUT RECORD (Discharge Record)

		A	D											D		
G		D	C	M	M	M	M	M	M	M	M	M	M	I		
E		M	H	A	A	A	A	A	A	A	A	A	A	S	A	E
O		D	D	T	T	T	T	T	T	T	T	T	T	P	M	L
L		A	A	D	D	D	D	D	C	C	C	P	P	S	T	G
O	I	T	T	X	X	X	X	X	P	P	P	H	H	T	T	T
C	D	E	E	1	2	3	4	5	1	2	3	1	2	T	T	T
3	138108	11476	11480	6201	V433	7893			4513	8801	3893	29		02	1647.20	1647.20

EXHIBIT 3: Making Discharge Records from Insurance Claims

```

***** Input the raw claims records and sort.;
DATA BASE;
INFILE MED1 MISSEVER;
INPUT @1GEOLOC $1. @2 ID $6.
      @18 ADMDATE YYMMDD6. @24 DCHDATE YYMMDD6.
      DX1 $ 30-34 DX2 $ 35-39 DX3 $ 40-44 DX4 $ 45-49
      DX5 $ 50-54 CP1 $ 55-59 CP2 $ 60-64 CP3 $ 65-69
      PHYS $ 73-74 DISP $ 75-76 AMTCLAM 77-86 ELGEXP 87-95;

RUN;
PROC SORT DATA=BASE;
  BY ID ADMDATE DCHDATE;
RUN;
*****      Retain the variables CT_DX, CT_CP, CT_PH, CT_DSP which are
              counters of the number of diagnosis, procedures, physicians,
              and discharge statuses on the discharge record.
*****      Retain the arrays MATDX1-5, MATCP1-3, MATPH1-2 which
              contain up to 5 diagnosis codes, 3 procedure codes, and 2
              physician codes for the discharge record.
*****      The array DX holds 5 diagnosis codes and array CP holds 3
              procedure codes from the insurance claim.
*****      Variables AMTTOT and ELGTOT are retained, and sum the
              insured claims amount (claimed and allowed).;

DATA HOSP1;
      (KEEP=GEOLOC ID ADMDATE DCHDATE AMTTOT ELGTOT MATDX1-MATDX5
        MATCP1-MATCP3 MATPH1-MATPH2 DISPSTAT DAYSCARE);

      SET BASE;
      BY ID ADMDATE DCHDATE;
      LENGTH DISPSTAT $ 2;
      RETAIN CT_DX CT_CP CT_PH CT_DSP 0;
      RETAIN AMTTOT ELGTOT 0;
      RETAIN MATDX1-MATDX5 MATCP1-MATCP3 MATPH1-MATPH2;
      RETAIN DISPSTAT;
      ARRAY DX (5) DX1-DX5;
      ARRAY CP (3) CP1-CP3;
      ARRAY MATDX (5) $5 MATDX1-MATDX5;
      ARRAY MATCP (3) $5 MATCP1-MATCP3;
      ARRAY MATPH (2) $2 MATPH1-MATPH2;
*****      If this is the first insurance claim for a discharge, set
              everything to zero or blank.;
      IF FIRST.DCHDATE THEN DO;
          DO I=1 TO 5;
              MATDX(I)=' ';
          END;
          DO I=1 TO 3;
              MATCP(I)=' ';
          END;
          DO I=1 TO 2;
              MATPH(I)=' ';
          END;
      END;

```

EXHIBIT 3: Making Discharge Records from Insurance Claims (continued)

```

END;
DISPSTAT='  ';
AMTTOT=0; ELGTOT=0;
CT_DX=0; CT_CP=0; CT_PH=0; CT_DSP=0;
END;
*****
***** For every record add the claim amount and eligible amount.;
      AMTTOT+AMTCLAM;
      ELGTOT+ELGEXP;
*****
***** Check if you have the maximum of 5 diagnosis codes for this
***** discharge. If not, check the claim record's diagnosis
***** codes against the diagnosis codes stored in MATDX1-5. Add
***** them to MATDX if they are unique.;
IF CT_DX < 5 THEN DO;
  DO J=1 TO 5;
    IF DX(J) ^= ' ' THEN DO;
      DO A=1 TO CT_DX;
        IF DX(J)=MATDX(A) THEN GOTO NEXTDX;
      END;
      CT_DX=CT_DX+1;
      MATDX(CT_DX)=DX(J);
    NEXTDX;
  END;
END;
END;
*****
***** .....
***** Repeat this logic for 3 procedure codes and the 2 physician
***** speciality codes.;
*****
***** If this is the last claim record for the discharge,
***** calculate Days of Care, DAYSCARE, and output a discharge
***** record.;
IF LAST.DCHDATE THEN DO;
  DAYSCARE=DCHDATE-ADMDATE;
  OUTPUT;
END;
RUN;

```

EXHIBIT 4: Making a clinical service to DRG Map

```
DATA ONE; SET BIGDATA(KEEP=DRG CLNDISP AGE AGEGRP SEX);
MEPR3=SUBSTR(CLNDISP,1,3); /* Clinical service codes */
*****
*****      Separate the kids and map DRG to Clinical Service.;
DATA KIDS; SET ONE;
IF RECAGE <= 17;
PROC SORT DATA=KIDS; BY DRG;
PROC FREQ DATA=KIDS ORDER=FREQ;
BY DRG;
TABLES MEPR3 / NOPRINT OUT=KID1;

PROC SORT DATA=KID1; BY DRG DESCENDING COUNT;
DATA KID2; SET KID1; BY DRG DESCENDING COUNT;
IF FIRST.DRG THEN C=0;
C+1;
IF C > 5 THEN DELETE;
RUN;
*****
*****      Total the counts by DRG;
PROC SUMMARY DATA=KID2 NWAY;
CLASS DRG;
VAR COUNT;
OUTPUT OUT=TWO SUM=DRGCNT;
*****
*****      Merge the totals with the counts and get a ratio;
PROC SORT DATA=KID2; BY DRG;
PROC SORT DATA=TWO; BY DRG ;
DATA TRES; MERGE TWO KID2; BY DRG;
RATIO=COUNT/DRGCNT;
DROP _TYPE_ _FREQ_ DRGCNT COUNT;
IF FIRST.DRG THEN C=0; C+1;
*****
*****      Output 5 data sets by c and rename the variables.;
DATA C1; SET TRES;
IF C=1; DROP RATIO MEPR3;
RATIOC1=RATIO;
MEPRC1=MEPR3;
DATA C2;
*****
*****      Sort each data set by DRG and match-merge them together
*****      for a map.;
PROC SORT DATA=C1; by drg;
PROC SORT DATA=C2; by drg; .....

data MAP.CMAPKID; MERGE C1 C2 C3 C4 C5; BY DRG;
DROP C;
RUN;
```

EXHIBIT 5: Map of clinical service to DRG

The SAS System

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DRG	MEPRC1	RATIOC1	MEPRC2	RATIOC2	MEPRC3	RATIOC3	MEPRC4	RATIOC4	MEPRC5	RATIOC5
001	ABD	0.79819	AAA	0.06325	AAJ	0.05723	ABC	0.05422	ABA	0.02711
002	ABD	0.61628	ABA	0.15116	ABC	0.11628	ABG	0.06977	AEA	0.04651
004	ABD	0.75728	AEA	0.14078	ABB	0.04854	ABA	0.02913	AAJ	0.02427
005	ABN	0.46377	ABA	0.29275	ABB	0.17101	ABC	0.04348	ABE	0.02899
006	AEA	0.81033	ABD	0.07969	AEC	0.06061	ABA	0.03816	ABI	0.01122
007	AEA	0.31250	AAA	0.27083	AAJ	0.14583	ABD	0.14583	ABA	0.12500
008	AEA	0.60445	AEB	0.16811	ABA	0.08405	ABD	0.07540	AEC	0.06799
009	ABD	0.34545	AEA	0.33636	ABA	0.12727	AAA	0.10909	ABC	0.08182
010	AAA	0.48344	AAK	0.24503	ABD	0.17881	AAJ	0.04636	AGA	0.04636
011	ABD	0.38983	AAA	0.24576	AAJ	0.15254	AAK	0.11017	ABG	0.10169
012	AAJ	0.42481	AAA	0.40602	ABD	0.06767	AGA	0.06391	AAR	0.03759
013	AAJ	0.58140	AAA	0.25581	AGA	0.07558	ABD	0.05233	AAN	0.03488
014	AAA	0.55536	AAJ	0.28471	AGA	0.07381	AAH	0.04306	ABD	0.04306
015	AAA	0.44049	AAJ	0.20866	ABA	0.13292	ABN	0.12674	ABB	0.09119
016	AAA	0.48780	AAJ	0.19512	ABA	0.12195	AAH	0.09756	ABD	0.09756
017	AAA	0.36957	AAJ	0.33696	ABD	0.17391	AGA	0.07609	AFA	0.04348
018	AAA	0.52294	AAJ	0.18349	ABD	0.12844	AEA	0.09174	AAK	0.07339
019	ABD	0.32013	AEA	0.25674	AAJ	0.18700	AAA	0.17433	ABA	0.06181
020	AAA	0.56744	AAJ	0.21860	ABD	0.09302	AGA	0.06512	AAH	0.05581
021	AAA	0.68864	AGA	0.16117	AAJ	0.06960	AAR	0.06593	ABD	0.01465
022	AAA	0.63636	AAH	0.14545	AGA	0.10909	AAB	0.05455	AAJ	0.05455
023	AAA	0.47619	AAJ	0.26984	AGA	0.19048	AAH	0.03175	ABD	0.03175
024	AAA	0.58270	AAJ	0.20865	AGA	0.11450	AAH	0.05344	ABD	0.04071
025	AAA	0.48705	AAJ	0.28730	AGA	0.15598	ABD	0.04377	ABA	0.02589
027	ABA	0.54054	ABD	0.22973	AGA	0.09009	AAA	0.07207	ABC	0.06757
028	ABA	0.38043	ABD	0.25000	AAA	0.17935	AGA	0.15761	ABC	0.03261
029	ABA	0.50692	ABD	0.18616	AGA	0.14591	AAA	0.13459	AAJ	0.02642

EXHIBIT 6: Applying the DRG-to-Clinical Service MAP

```

*****      Divide the database by the 3 DRG to Clinical Service Maps.;
DATA FEMALE MALE KIDS; SET HMO.MCDATA;
DISP=1;
KEEP DRG ID RECNO SEX AGE DISP;
IF SEX='F' AND AGE > 17 THEN OUTPUT FEMALE;
IF SEX='M' AND AGE > 17 THEN OUTPUT MALE;
IF AGE <=17 THEN OUTPUT KIDS;
*****
*****      Do the Adult females first;
*****      Total the number of dispositions in each DRG;
PROC SUMMARY DATA=FEMALE NWAY;
CLASS DRG;
VAR DISP;
OUTPUT OUT=FEMSUM SUM=;
*****      Match-merge the map with the database and calculate the number of
*****      discharges in each Clinical Service code per DRG;
PROC SORT DATA=HMO.CMAP_FML; BY DRG; /* Previous made map */
DATA TOGFEM; MERGE HMO.CMAP_FML FEMSUM(IN=DAT); BY DRG;
IF DAT;
CNTMEP1=ROUND((RATIOC1*DISP),1);
CNTMEP2=ROUND((RATIOC2*DISP),1);
CNTMEP3=ROUND((RATIOC3*DISP),1);
CNTMEP4=ROUND((RATIOC4*DISP),1);
CNTMEP5=ROUND((RATIOC5*DISP),1);
DROP RATIOC1-RATIOC5 _TYPE_ _FREQ_ NUDISP;
NUDISP=SUM(OF CNTMEP1-CNTMEP5);
IF NUDISP NE DISP THEN DO;
    IF NUDISP LT DISP THEN CNTMEP1=CNTMEP1+1;
    IF NUDISP GT DISP THEN CNTMEP1=CNTMEP1-1;
END;
*****
*****      Match merge the above database with the original and assign a Clinical
*****      Service to each record. Original database has a record number identifier.;
PROC SORT DATA=FEMALE; BY DRG;
DATA WKFEM1; MERGE TOGFEM FEMALE; BY DRG;
IF FIRST.DRG THEN C=0; C+1;
IF C <= CNTMEP1 THEN MEPR3=MEPRC1;
ELSE IF C <= (CNTMEP1+CNTMEP2) THEN MEPR3=MEPRC2;
ELSE IF C <= (CNTMEP1+CNTMEP2+CNTMEP3)
    THEN MEPR3=MEPRC3;
ELSE IF C <= (CNTMEP1+CNTMEP2+CNTMEP3+CNTMEP4)
    THEN MEPR3=MEPRC4;
ELSE IF C > (CNTMEP1+CNTMEP2+CNTMEP3+CNTMEP4)
    THEN MEPR3=MEPRC5;
KEEP MEPR3 DRG ID RECNO;
*****
*****      Combine the female, male and kids output and sort by recno.
*****      Match-merge this data set with the original dataset;

```

EXHIBIT 7: Making Utilization Rates

```
DATA HOSPALL (KEEP=AGE SEX DMISAGE MEPR3 DAYSCARE);
SET HOSP1 HOSP2 HOSP3 HOSP4 HOSPM;
*****
***** Place discharge records into age groups.
*****;
      IF AGE < 5 THEN DMISAGE='A';
      ELSE IF 5 <= AGE <= 14 THEN DMISAGE='B';
      ELSE IF 15 <= AGE <= 17 THEN DMISAGE='C';
      ELSE IF 18 <= AGE <= 24 THEN DMISAGE='D';
      ELSE IF 25 <= AGE <= 34 THEN DMISAGE='E';
      ELSE IF 35 <= AGE <= 44 THEN DMISAGE='F';
      ELSE IF 45 <= AGE <= 64 THEN DMISAGE='G';
      ELSE DMISAGE='H';
RUN;
*****
***** Sum the Discharge records by age group and gender. Rename Freq
      as number of discharge records and dayscare to LOS.
*****;
PROC SUMMARY DATA=HOSPALL NWAY MISSING;
  CLASS SEX DMISAGE MEPR3;
  VAR DAYSCARE;
  OUTPUT OUT = HSPSUM (DROP=_TYPE_ RENAME=(_FREQ_=DISCHARG)) SUM=LOS;
RUN;
*****
***** Sort the summed population by age group and gender.
*****;
PROC SORT DATA=ALLPOP;
  BY SEX DMISAGE;
RUN;
*****
***** Match-merge the summed population and discharge records and
      calculate a rate for discharges and average length of stay.
      Average length of stay is summed bed days divided by number
      of discharges.
*****;
DATA MRG;
  MERGE ALLPOP (DROP=POP1-POP3) HSPSUM;
  BY SEX AGE;
  RATE=1000*(DISCHARG/POP)/12;
  ALOS=LOS/DISCHARG;RUN;
RUN;
```

Figure 2 USER INPUT SCREEN

Command ==>

Which population data set do you wish to use as your basis:

Enter Suffix: _____ (enter 89, 90 or 91 to use orig
(? and <ENTER> population from those years, or
for a list) enter your own saved population)

Do you want to edit this pop data? (Y or N) N

If you wish to store these new population figures in a
permanent file, enter the suffix here:

WARNING: If you enter the same
suffix as above, you will
overwrite your population
file.

_____ F10 to process

EXHIBIT 8: Controlling the User Screen

```
INIT:
    return;
MAIN:
    erroroff yr ext editt;
***** If user enters a question mark in first answer, this will bring up
***** a selection list of all the population files available.;
    if index(yr, '?') > 0 then do;
        select=dirlist('pop', 'data', 1, 'no');
        yr=substr(select, 4);
    end;
***** Checks to see that the suffix (yr) supplied in question one, is actually a
***** population file that exists.;
    dsname = 'pop.pop' || yr;
    rc=exist(dsname);
    if rc=0 then do;
        erroron yr;
        _msg_='The file ' || dsname || ' does not exist in D:\POP';
        cursor yr;
    end;
***** If they wish to store the population file under another name, this
***** checks to make sure the suffix (ext) provided makes a valid sasname.;
    if ext^=' ' then do;
        ckname='pop' || ext;
        rc=sasname(ckname);
        if rc=0 then do;
            erroron ext;
            _msg_='The ext.' || ext || ' does not append to pop to give a valid sasname';
            cursor ext;
        end;
    end;
***** A new population file will not be made if there are no edits made to
***** the selected population file.;
    if editt='N' and ext^=' ' then do;
        cursor editt;
        erroron editt;
        _msg_='If no edits are made, then a permanent file will not be made';
    end;
return;
TERM:
***** User make cancel out of the program.;
    if (_status_='C') then return;
***** Bring the population file selected into the WORK directory.;
    submit continue;
        data pop;
            set pop.pop&yr;
        run;
    endsubmit;
```

EXHIBIT 8: Controlling the User Screen (continued)

```
***** If user wants to edit, call the popexed.program which is an extended
***** table of the pop file.;
*****;
      if editt='Y' then call display('popexed.program');
***** Save the new pop file in a permanent data set with the supplied suffix (ext).;
*****;
      if editt='Y' and ext^=' ' then do;
          call symput('ext',ext);
          submit continue;
              data pop.pop&ext;
                  set pop;
              run;
          endsubmit;
      end;
***** Include the sas file GWYIXXX.SAS which has the programming that merges
***** population and rates to estimate hospital discharges and bed days.;
*****;
submit continue;
    %include 'c:\codefile\gwyixxx.sas';
    run;
endsubmit;
return;
```

EXHIBIT 9: Making the estimates in AF after entering "your" population

```
***** MRG is the civilian rate file by sex age mepr3;
*****;
PROC SORT DATA=MRG;
  BY SEX AGE MEPR3;
RUN;
***** March-merge the rate file with the population file;
*****;
PROC SORT DATA = POP; BY SEX AGE;
***** Calculate the discharges and bed days by multiplying the rate by the
***** population;
DATA COMP;
  MERGE POP (IN=IN1) MRG;
  BY SEX AGE ;
  IF IN1;
  DSP_EST=((RATE/1000)*TOTAL);
  OBD_EST=DSP_EST*ALOS;
  IF DSP_EST <0 THEN DO;
    DSP_EST=0;
    OBD_EST=0;
  END;
RUN;
***** Summarize data set to report estimates by physician speciality;
*****;
PROC SUMMARY DATA=COMP NWAY;
  CLASS MEPR3;
  VAR DSP_EST OBD_EST;
  OUTPUT OUT=OBD (DROP=_FREQ_ _TYPE_) SUM=;
RUN;
```

EXHIBIT 10: OUTPUT

POPULATION

SEX	AGE	EMPLOYEE	D_EMP	RETIREE	D_RETIRE	OTHER	TOTAL
F	A	0	2450	0	199	7	2656
F	B	0	4058	0	1853	68	5979
F	C	12	906	0	1118	59	2095
F	D	951	2171	2	1976	102	5202
F	E	1412	3460	33	452	57	5414
F	F	946	2584	193	2790	137	6650
F	G	165	679	337	10363	1226	12770
F	H	0	67	323	5253	3222	8865
M	A	0	2411	0	206	13	2630
M	B	0	4426	0	1841	76	6343
M	C	37	914	0	1218	53	2222
M	D	2571	809	24	1922	86	5412
M	E	4810	368	155	75	18	5426
M	F	3881	240	1995	59	8	6183
M	G	859	123	11990	51	9	13032
M	H	1	21	6955	36	9	7022
		-----	-----	-----	-----	-----	-----
		15645	25687	22007	29412	5150	97901

EXHIBIT 10: OUTPUT (continued)

PHYSICIAN SPECIALITY	DISCHARGES PER MO	BED DAYS PER MO
ALLERGY	0.30	1.50
ADOLESCENT PEDIATRICS	0.06	0.15
CARDIOLOGY	38.52	192.02
CARDIOVASCULAR/THORACIC SURGERY	7.17	74.96
DERMATOLOGY	0.17	0.83
ENDOCRINOLOGY	0.74	4.08
FAMILY PRACTICE MEDICINE	36.64	153.03
GASTROENTEROLOGY	10.12	48.42
GENERAL SURGERY	74.69	434.18
GYNECOLOGY	32.34	136.80
HIV III REFERRAL CENTERS	0.20	1.24
INFECTIOUS DISEASE	0.23	2.61
INTERNAL MEDICINE	131.85	822.53
NEPHROLOGY	0.76	4.76
NEUROLOGY	6.29	44.82
NEUROSURGERY	11.00	81.07
NURSERY	102.62	589.79
OBSTETRICS	72.48	209.30
ONCOLOGY	9.35	55.66
OPHTHALMOLOGY	3.56	7.81
ORAL SURGERY	2.38	9.19
ORGAN TRANSPLANT	0.82	8.77
ORTHOPEDICS	51.98	315.15
OTOLARYNGOLOGY	10.37	38.23
PEDIATRIC SURGERY	0.15	0.70
PEDIATRICS	21.82	91.00
PERIPHERAL VASCULAR SURGERY	4.06	32.32
PLASTIC SURGERY	1.26	4.81
PODIATRY	2.30	6.35
PROCTOLOGY	0.15	1.39
PSYCHIATRICS	8.38	73.33
PULMONARY/UPPER RESPIRATORY DISEASE	4.35	23.71
RHEUMATOLOGY	0.18	1.09
SUBSTANCE ABUSE REHABILITATION	2.54	31.69
UROLOGY	24.86	109.56
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	674.67	3612.87