HEALTHCARE COST AND UTILIZATION PROJECT

Agency for Healthcare Research and Quality

HCUP Online Tutorial Resource: National Estimates Example Code and Output

CODE: Count records with CCS=128 (asthma) from 2007 NIS File

```
Title1 'Count records with CCS=128  (asthma) from 2007 NIS File';
libname nis2007  "C:\NIS 2007\";
options obs = MAX    PageSize=51 LineSize=146 ;

data asthma;
      set NIS2007.nis_2007_core (keep=KEY HOSPID DISCWT NIS_STRATUM DXCCS1);
      if dxccs1 eq 128 then asthma = 1;
      else asthma = 0;
run;

PROC SURVEYMEANS DATA=asthma SUM STD MEAN STDERR ;
    VAR asthma;
    CLUSTER hospid ;
    STRATA NIS_stratum ;
run;
```

OUTPUT: Count records with CCS=128 (asthma) from 2007 NIS File

```
                    Count records with CCS=128  (asthma) from 2007 NIS File

                                 The SURVEYMEANS Procedure

                                       Data Summary

                            Number of Strata                 60
                            Number of Clusters             1044
                            Number of Observations      8043415


                                      Statistics

                                     Std Error
            Variable            Mean   of Mean            Sum         Std Dev
            ____________________________________________________________________
            asthma          0.010125  0.000315          81443      2810.775895
            ____________________________________________________________________
```

CODE: Produce national estimate of discharges with CCS=128 (asthma) from 2007 NIS File (weighted)

```
Title1 'Produce national estimate of discharges with CCS=128 (asthma) from
2007 NIS File (weighted)';
libname nis2007  "C:\NIS 2007\";
options obs = MAX    PageSize=51 LineSize=146 ;

data asthma;
      set NIS2007.nis_2007_core (keep=KEY HOSPID DISCWT NIS_STRATUM DXCCS1);
      if dxccs1 eq 128 then asthma = 1;
      else asthma = 0;
run;

PROC SURVEYMEANS DATA=asthma SUM STD MEAN STDERR ;
    VAR asthma;
    WEIGHT discwt;
    CLUSTER hospid ;
    STRATA NIS_stratum ;
run;
```

OUTPUT: Produce national estimate of discharges with CCS=128 (asthma) from 2007 NIS File (weighted)

```
Produce national estimate of discharges with CCS=128 (asthma) from 2007 NIS File (weighted)

                              The SURVEYMEANS Procedure

                                     Data Summary

                         Number of Strata                  60
                         Number of Clusters              1044
                         Number of Observations       8043415
                         Sum of Weights              39541948


                                   Statistics

                                  Std Error
          Variable            Mean   of Mean            Sum         Std Dev

          ____________________________________________________________________
          asthma          0.010169  0.000321         402088           13985
          ____________________________________________________________________
```

CODE: Produce regional estimates of discharges with CCS=128 (asthma) from 2007 NIS File (weighted)

```
Title1 'Produce regional estimates of discharges with CCS=128 (asthma) from
2007 NIS File (weighted)';
libname nis2007  "C:\NIS 2007\";
options obs = MAX    PageSize=51 LineSize=146 ;

data asthma;
      set NIS2007.nis_2007_core (keep=KEY HOSPID DISCWT NIS_STRATUM DXCCS1);
      retain dischgs 1;
      region = substr(left(put(nis_stratum,8.)),1,1);
      if dxccs1 eq 128 then asthma = 1;
      else asthma = 0;
run;

PROC SURVEYMEANS DATA=asthma SUM STD MEAN STDERR ;
    VAR dischgs;
    WEIGHT discwt ;
    CLUSTER hospid ;
    STRATA NIS_stratum ;
    DOMAIN region * asthma ;
run;
```

OUTPUT: Produce regional estimates of discharges with CCS=128 (asthma) from 2007 NIS File (weighted)

Produce regional estimates of discharges with CCS=128 (asthma) from 2007 NIS File (weighted)

The SURVEYMEANS Procedure

Data Summary

Number of Strata	60
Number of Clusters	1044
Number of Observations	8043415
Sum of Weights	39541948

Statistics

Variable	Mean	Std Error of Mean	Sum	Std Dev
dischgs	1.000000	0	39541948	799355

Domain Analysis: region*asthma

region	asthma	Variable	Mean	Std Error of Mean	Sum	Std Dev
1	0	dischgs	1.000000	0	7660700	335678
	1	dischgs	1.000000	0	92596	8089.096894
2	0	dischgs	1.000000	0	9038455	322029
	1	dischgs	1.000000	0	91657	5868.575661
3	0	dischgs	1.000000	0	15112513	589289
	1	dischgs	1.000000	0	160784	9133.832891
4	0	dischgs	1.000000	0	7328192	256261
	1	dischgs	1.000000	0	57051	3505.469814

CODE: Count hospital records with HOSP_TEACH=1 from 2007 NIS HOSPITAL File

```
Title1 'Count hospital records with HOSP_TEACH=1 from 2007 NIS HOSPITAL
File';
libname nis2007  "C:\NIS 2007\";
options obs = MAX    PageSize=51 LineSize=146 ;

data TEACH1;
   set NIS2007.nis_2007_hospital (keep=HOSPID DISCWT NIS_STRATUM HOSP_TEACH);
   if hosp_teach = 1 then teach = 1;
   else teach = 0;
run;

PROC SURVEYMEANS DATA=TEACH1 SUM STD MEAN STDERR ;
    VAR teach;
    CLUSTER hospid ;
    STRATA NIS_stratum ;
run;
```

OUTPUT: Count hospital records with HOSP_TEACH=1 from 2007 NIS HOSPITAL File

```
              Count hospital records with HOSP_TEACH=1 from 2007 NIS HOSPITAL File


                              The SURVEYMEANS Procedure

                                    Data Summary

                        Number of Strata                  60
                        Number of Clusters              1044
                        Number of Observations          1044


                                  Statistics

                                  Std Error
            Variable            Mean         of Mean             Sum         Std Dev
            ____________________________________________________________________________
            teach           0.182950        0.003682      191.000000        3.844516
            ____________________________________________________________________________
```

CODE: Count records with CCS=123 (influenza) from 2006 NEDS File

```
Title1 'Count records with CCS=123 (influenza) from 2006 NEDS File';
libname neds2006  "C:\NEDS 2006\";
options obs = MAX    PageSize=51 LineSize=146 ;

data influenza1;
      set NEDS2006.neds_2006_core (keep=HOSP_ED DISCWT NEDS_STRATUM DXCCS1);
      if dxccs1 eq 123 then influenza = 1;
      else influenza = 0;
run;

PROC SURVEYMEANS DATA=influenza1 SUM STD MEAN STDERR ;
    VAR influenza;
    CLUSTER hosp_ed ;
    STRATA NEDS_stratum ;
run;
```

OUTPUT: Count records with CCS=123 (influenza) from 2006 NEDS File

```
                    Count records with CCS=123 (influenza) from 2006 NEDS File

                                 The SURVEYMEANS Procedure

                                       Data Summary

                          Number of Strata                  71
                          Number of Clusters               958
                          Number of Observations      25954816


                                      Statistics

                                     Std Error
          Variable             Mean     of Mean            Sum         Std Dev
          ------------------------------------------------------------------------
          influenza        0.001779  0.000065779          46185     1852.887261
          ------------------------------------------------------------------------
```

CODE: Produce national estimate of discharges with CCS=123 (influenza) from 2006 NEDS File (weighted)

```
Title1 'Produce national estimate of discharges with CCS=123 (influenza) from
2006 NEDS File (weighted)';
libname neds2006  "C:\NEDS 2006\";
options obs = MAX    PageSize=51 LineSize=146 ;

data influenza1;
      set NEDS2006.neds_2006_core (keep=HOSP_ED DISCWT NEDS_STRATUM DXCCS1);
      if dxccs1 eq 123 then influenza = 1;
      else influenza = 0;
run;

PROC SURVEYMEANS DATA=influenza1 SUM STD MEAN STDERR ;
    VAR influenza;
    WEIGHT discwt;
    CLUSTER hosp_ed ;
    STRATA NEDS_stratum ;
run;
```

OUTPUT: Produce national estimate of discharges with CCS=123 (influenza) from 2006 NEDS File (weighted)

```
Produce national estimate of discharges with CCS=123 (influenza) from 2006 NEDS File (weighted)

                                The SURVEYMEANS Procedure

                                       Data Summary

                           Number of Strata                  71
                           Number of Clusters               958
                           Number of Observations      25954816
                           Sum of Weights             120033750


                                     Statistics

                                    Std Error
            Variable             Mean         of Mean             Sum         Std Dev
            ------------------------------------------------------------------------
            influenza        0.001764     0.000070788          211740     8898.259246
            ------------------------------------------------------------------------
```

CODE: Produce regional estimates of discharges with CCS=123 (influenza) from 2006 NEDS File (weighted)

```
Title1 'Produce regional estimates of discharges with CCS=123 (influenza)
from 2006 NEDS File (weighted)';
libname neds2006  "C:\NEDS 2006\";
options obs = MAX    PageSize=51 LineSize=146 ;

data influenza1;
      set NEDS2006.neds_2006_core (keep=HOSP_ED DISCWT NEDS_STRATUM DXCCS1);
      retain edrecs 1;
      region = substr(left(put(neds_stratum,8.)),1,1);
      if dxccs1 eq 123 then influenza = 1;
      else influenza = 0;
run;

PROC SURVEYMEANS DATA=influenza1 SUM STD MEAN STDERR ;
    VAR edrecs;
    WEIGHT discwt ;
    CLUSTER hosp_ed ;
    STRATA NEDS_stratum ;
    DOMAIN region * influenza ;
run;
```

OUTPUT: Produce regional estimates of discharges with CCS=123 (influenza) from 2006 NEDS File (weighted)

Produce regional estimates of discharges with CCS=123 (influenza) from 2006 NEDS File (weighted)

The SURVEYMEANS Procedure

Data Summary

Number of Strata	71
Number of Clusters	958
Number of Observations	25954816
Sum of Weights	120033750

Statistics

Variable	Mean	Std Error of Mean	Sum	Std Dev
edrecs	1.000000	0	120033750	2477212

Domain Analysis: region*influenza

region	influenza	Variable	Mean	Std Error of Mean	Sum	Std Dev
1	0	edrecs	1.000000	0	23520030	1120105
	1	edrecs	1.000000	0	27885	2620.732277
2	0	edrecs	1.000000	0	27789334	1153925
	1	edrecs	1.000000	0	47477	3196.225129
3	0	edrecs	1.000000	0	46771539	1656723
	1	edrecs	1.000000	0	118487	7742.256091
4	0	edrecs	1.000000	0	21741106	889365
	1	edrecs	1.000000	0	17892	1467.104457

CODE: Count hospital records with HOSP_TRAUMA= (1, 2, 3, 8, or 9) from 2006 NEDS HOSPITAL File

```
Title1 'Count hospital records with HOSP_TRAUMA= (1, 2, 3, 8, or 9) from 2006
NEDS HOSPITAL File';
libname neds2006  "C:\NEDS 2006\";
options obs = MAX    PageSize=51 LineSize=146 ;

data TRAUMA1;
   set NEDS2006.neds_2006_hospital (keep=HOSP_ED DISCWT NEDS_STRATUM
HOSP_TRAUMA);
   if hosp_trauma in (1,2,3,8,9) then trauma = 1;
   else trauma = 0;
run;

PROC SURVEYMEANS DATA=TRAUMA1 SUM STD MEAN STDERR ;
    VAR trauma;
    CLUSTER hosp_ed ;
    STRATA NEDS_stratum ;
run;
```

OUTPUT: Count hospital records with HOSP_TRAUMA= (1, 2, 3, 8, or 9) from 2006 NEDS HOSPITAL File

```
Count hospital records with HOSP_TRAUMA= (1, 2, 3, 8, or 9) from 2006 NEDS HOSPITAL File

                              The SURVEYMEANS Procedure

                                     Data Summary

                        Number of Strata                  71
                        Number of Clusters               958
                        Number of Observations           958


                                   Statistics

                                  Std Error
Variable            Mean            of Mean             Sum         Std Dev
_____________________________________________________________________________
 trauma          0.136743                  0      131.000000               0
_____________________________________________________________________________
```

CODE: Produce national estimate of hospitals with HOSP_TRAUMA = (1, 2, 3, 8, or 9) from 2006 NEDS HOSPITAL File (weighted)

```
Title1 'Produce national estimate of hospitals with HOSP_TRAUMA = (1, 2, 3,
8, or 9) from 2006 NEDS HOSPITAL File (weighted)';
libname neds2006  "C:\NEDS 2006\";
options obs = MAX    PageSize=51 LineSize=146 ;

data TRAUMA1;
   set NEDS2006.neds_2006_hospital (keep=HOSP_ED HOSPWT NEDS_STRATUM
HOSP_TRAUMA);
   if hosp_trauma in (1,2,3,8,9) then trauma = 1;
   else trauma = 0;
run;

PROC SURVEYMEANS DATA=TRAUMA1 SUM STD MEAN STDERR ;
    VAR trauma;
    WEIGHT hospwt;
    CLUSTER hosp_ed ;
    STRATA NEDS_stratum ;
run;
```

OUTPUT: Produce national estimate of hospitals with HOSP_TRAUMA = (1, 2, 3, 8, or 9) from 2006 NEDS HOSPITAL File (weighted)

```
Produce national estimate of hospitals with HOSP_TRAUMA = (1, 2, 3, 8, or 9) from 2006 NEDS
                                HOSPITAL File (weighted)

                              The SURVEYMEANS Procedure

                                    Data Summary

                         Number of Strata                  71
                         Number of Clusters               958
                         Number of Observations           958
                         Sum of Weights                  4845


                                  Statistics

                                 Std Error
Variable            Mean          of Mean              Sum         Std Dev
_____________________________________________________________________________
 trauma          0.143860                0       697.000000               0
_____________________________________________________________________________
```

CODE: Count records with CCS=56 (cystic fibrosis) from 2006 KID File

```
Title1 'Count records with CCS=56 (cystic fibrosis) from 2006 KID File';
libname kid2006  "C:\KID 2006\";
options obs = MAX    PageSize=51 LineSize=146 ;

data cf1;
      set KID2006.kid_2006_core (keep=HOSPID DISCWT DXCCS1 KID_stratum);
      if dxccs1 eq 56 then cysticf = 1;
      else cysticf = 0;
run;

PROC SURVEYMEANS DATA=cf1 SUM STD MEAN STDERR ;
    VAR cysticf;
    CLUSTER hospid ;
    STRATA KID_stratum ;
run;
```

OUTPUT: Count records with CCS=56 (cystic fibrosis) from 2006 KID File

```
                Count records with CCS=56 (cystic fibrosis) from 2006 KID File

                                The SURVEYMEANS Procedure

                                       Data Summary

                           Number of Strata                  60
                           Number of Clusters              3739
                           Number of Observations       3131324


                                      Statistics

                                     Std Error
            Variable            Mean   of Mean             Sum         Std Dev
            ------------------------------------------------------------------
            cysticf         0.001298  0.000103     4063.000000      346.994786
            ------------------------------------------------------------------
```

CODE: Produce national estimate of discharges with CCS=56 (cystic fibrosis) from 2006 KID File (weighted)

```
Title1 'Produce national estimate of discharges with CCS=56 (cystic fibrosis)
from 2006 KID File (weighted)';
libname kid2006  "C:\KID 2006\";
options obs = MAX    PageSize=51 LineSize=146 ;

data cf1;
      set KID2006.kid_2006_core (keep=HOSPID DISCWT DXCCS1 KID_STRATUM);
      if dxccs1 eq 56 then cysticf = 1;
      else cysticf = 0;
run;

PROC SURVEYMEANS DATA=cf1 SUM STD MEAN STDERR ;
    VAR cysticf;
    WEIGHT discwt;
    CLUSTER hospid ;
    STRATA KID_stratum ;
run;
```

OUTPUT: Produce national estimate of discharges with CCS=56 (cystic fibrosis) from 2006 KID File (weighted)

```
    Produce national estimate of discharges with CCS=56 (cystic fibrosis) from 2006 KID File
                                        (weighted)

                                 The SURVEYMEANS Procedure

                                        Data Summary

                           Number of Strata                  60
                           Number of Clusters              3739
                           Number of Observations       3131324
                           Sum of Weights            7558812.48


                                       Statistics

                                      Std Error
            Variable            Mean    of Mean             Sum         Std Dev
            ____________________________________________________________________
            cysticf         0.000919  0.000075764     6946.648756      601.770739
            ____________________________________________________________________
```

CODE: Produce regional estimates of discharges with CCS=56 (cystic fibrosis) from 2006 KID File (weighted)

```
Title1 'Produce regional estimates of discharges with CCS=56 (cystic
fibrosis) from 2006 KID File (weighted)';
libname kid2006  "C:\KID 2006\";
options obs = MAX    PageSize=51 LineSize=146 ;

data cf1;
      set KID2006.kid_2006_core (keep=HOSPID DISCWT DXCCS1);
      retain dischgs 1;
      if dxccs1 eq 56 then cysticf = 1;
      else cysticf = 0;
run;

proc sort data=cf1;
   by hospid;
run;

proc sort data=KID2006.kid_2006_hospital (keep=HOSPID KID_STRATUM
Hosp_region) out=hosp;
   by hospid;
run;

data cf2;
   merge cf1 (in=a)
         hosp (in=b);
   by hospid;
   if a and b;
   region = Hosp_region ;
run;

PROC SURVEYMEANS DATA=cf2 SUM STD MEAN STDERR ;
    VAR dischgs;
    WEIGHT discwt ;
    CLUSTER hospid ;
    STRATA KID_stratum ;
    DOMAIN region * cysticf ;
run;
```

OUTPUT: Produce regional estimates of discharges with CCS=56 (cystic fibrosis) from 2006 KID File (weighted)

```
Produce regional estimates of discharges with CCS=56 (cystic fibrosis) from 2006 KID File
                                        (weighted)

                                The SURVEYMEANS Procedure

                                       Data Summary

                          Number of Strata                  60
                          Number of Clusters              3739
                          Number of Observations       3131324
                          Sum of Weights            7558812.48


                                     Statistics

                                     Std Error
          Variable            Mean     of Mean             Sum         Std Dev
          ---------------------------------------------------------------------
          dischgs         1.000000           0         7558812          123453
          ---------------------------------------------------------------------


                             Domain Analysis: cysticf*region

                                                 Std Error
   cysticf  region    Variable          Mean     of Mean             Sum         Std Dev
 ---------------------------------------------------------------------------------------
   0          1     dischgs         1.000000           0         1276711           56801
              2     dischgs         1.000000           0         1645709           59677
              3     dischgs         1.000000           0         2894738           92104
              4     dischgs         1.000000           0         1734707           67196
 1            1     dischgs           1.000000           0     1302.943850      329.418971
              2     dischgs           1.000000           0     2002.856118      397.992297
              3     dischgs           1.000000           0     2222.916758      365.441907
              4     dischgs           1.000000           0     1417.932030      304.223111
 ---------------------------------------------------------------------------------------
```

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