

NOTE: Copyright (c) 1999-2001 by SAS Institute Inc., Cary, NC, USA.
NOTE: SAS (r) Proprietary Software Release 8.2 (TS2M0)
Licensed to AGENCY FOR HEALTHCARE RESEARCH & QUALITY, Site 0040776001.
NOTE: This session is executing on the WIN_PRO platform.

NOTE: This installation is running Base SAS hot fix bundle 82BX08.

NOTE: AUTOEXEC processing beginning; file is C:\PROGRA~1\SASINS~1\SAS\V8\autoexec.sas.

```
1 ** C:\PROGRAM FILES\SAS INSTITUTE\SAS\V8\AUTOEXEC.SAS ;
2
3 OPTIONS LS= 132 PS= 70 MERGENOBY=ERROR MSGLEVEL=i;
```

NOTE: AUTOEXEC processing completed.

```
1 /*****\
2
3 PROGRAM: C:\MEPS\PROG\EXAMPLE_E2.SAS
4
5 DESCRIPTION: THIS EXAMPLE SHOWS HOW TO
6 (1) COMPUTE AVERAGE TOTAL HEALTHCARE EXPENDITURES
7 FOR CHILDREN 0-5 FOR THE 4 YEARS 1996-1999.
8 (2) COMPUTE AVERAGE TOTAL EXPENDITURES FOR
9 1996-1997 AND 1998-1999 USING POOLED DATA.
10
11 EXPENDITURES: FOR THE POOLED DATA FILES, EXPENDITURES ARE
12 STANDARDIZED TO 1999 DOLLARS USING THE ANNUAL CPI
13 FOR ALL URBAN CONSUMERS (CPI-U) FOR THE U.S. CITY
14 AVERAGE FOR ALL ITEMS, 1982-84=100. A TABLE WITH
15 THIS DATA IS AVAILABLE AT THE CPI HOME PAGE:
16 http://www.bls.gov/cpi/home.htm.
17
18 ANNUAL CPI-U (1996) = 156.9
19 ANNUAL CPI-U (1997) = 160.5
20 ANNUAL CPI-U (1998) = 163.0
21 ANNUAL CPI-U (1999) = 166.6
22
23 INPUT FILES: (1) C:\MEPS\DATA\H12.SD7 (1996 FULL-YEAR DATA FILE)
24 (2) C:\MEPS\DATA\H20.SD7 (1997 FULL-YEAR DATA FILE)
25 (3) C:\MEPS\DATA\H28.SD7 (1998 FULL-YEAR DATA FILE)
26 (4) C:\MEPS\DATA\H38.SD7 (1999 FULL-YEAR DATA FILE)
27 (5) C:\MEPS\DATA\H36.SD7
28 (1996-2002 POOLED ESTIMATION FILE)
29
30 \*****/
31
32 LIBNAME CMEPS V8 'C:\MEPS\DATA';
NOTE: Libref CMEPS was successfully assigned as follows:
Engine: V8
Physical Name: C:\MEPS\DATA
33
34 FOOTNOTE 'PROGRAM: C:\MEPS\PROG\PMED\EXAMPLE_E2.SAS';
35
36 TITLE1 'AHRQ MEPS DATA USERS WORKSHOP (ESTIMATION) -- NOV/DEC 2004';
37 TITLE2 'AVERAGE TOTAL HEALTHCARE EXPENDITURES, 1996 - 1999';
```

```
38     TITLE3 ' ';
39
40     PROC FORMAT;
41         VALUE AGEF
42             0-5 = 'AGE 0-5'
43             OTHER = 'OTHER';
NOTE: Format AGEF has been output.
44     RUN;
```

```

45
46 /***** THESE DATA STEPS READ IN THE REQUIRED VARIABLES FROM THE *****/
47 /***** FULL-YEAR FILES. *****/
48
49 /***** AGEyyX VARIABLE USED TO DISTINGUISH THE 0-5 POPULATION. *****/
50
51 /*****          1996 DATA          *****/
52 /***** FOR LATER POOLING, CREATE A VARIABLE 'TOTEXP' THAT IS *****/
53 /***** STANDARDIZED TO 1999 DOLLARS BY MULTIPLYING TOTEXP96 BY *****/
54 /***** (CPI_1999 / CPI_1996). *****/

```

```

55
56 DATA H12;
57     SET CMEPS.H12 (KEEP= DUPERSID TOTEXP96 WTDPER96 VARPSU96
58                 VARSTR96 AGE96X);
59     TOTEXP = TOTEXP96 * (166.6/156.9);
60 RUN;

```

NOTE: There were 22601 observations read from the data set CMEPS.H12.

NOTE: The data set WORK.H12 has 22601 observations and 7 variables.

```

61
62 /*****          1997 DATA          *****/
63 /***** FOR LATER POOLING, CREATE A VARIABLE 'TOTEXP' THAT IS *****/
64 /***** STANDARDIZED TO 1999 DOLLARS BY MULTIPLYING TOTEXP97 BY *****/
65 /***** (CPI_1999 / CPI_1997). *****/
66
67 DATA H20;
68     SET CMEPS.H20 (KEEP= DUPERSID TOTEXP97 WTDPER97 VARPSU97
69                 VARSTR97 AGE97X);
70     TOTEXP = TOTEXP97 * (166.6/160.5);
71 RUN;

```

NOTE: There were 34551 observations read from the data set CMEPS.H20.

NOTE: The data set WORK.H20 has 34551 observations and 7 variables.

```

72
73 /*****          1998 DATA          *****/
74 /***** FOR LATER POOLING, CREATE A VARIABLE 'TOTEXP' THAT IS *****/
75 /***** STANDARDIZED TO 1999 DOLLARS BY MULTIPLYING TOTEXP98 BY *****/
76 /***** (CPI_1999 / CPI_1998). *****/
77
78 DATA H28;
79     SET CMEPS.H28 (KEEP= DUPERSID TOTEXP98 WTDPER98 VARPSU98
80                 VARSTR98 AGE98X);
81     TOTEXP = TOTEXP98 * (166.6/163.0);
82 RUN;

```

NOTE: There were 24072 observations read from the data set CMEPS.H28.

NOTE: The data set WORK.H28 has 24072 observations and 7 variables.

```

83
84 /*****          1999 DATA          *****/
85

```

```
86      DATA H38;
87          SET CMEPS.H38 (KEEP= DUPERSID TOTEXP99 PERWT99F VARPSU99
88                          VARSTR99 AGE99X);
89      RUN;
```

NOTE: There were 24618 observations read from the data set CMEPS.H38.
NOTE: The data set WORK.H38 has 24618 observations and 6 variables.

```
90
91      TITLE4 '1996 DATA';
92
93      PROC SURVEYMEANS DATA= H12 NOBS SUMWGT MEAN STDERR CLM;
94          VAR TOTEXP96;
95          STRATA VARSTR96;
96          CLUSTER VARPSU96;
```

```
97      WEIGHT WTDPER96;
98      DOMAIN AGE96X;
99      FORMAT AGE96X AGEF. ;
100     RUN;
```

NOTE: Due to nonpositive weights, 1030 observation(s) were deleted.

NOTE: Only one cluster in a stratum in domain AGE96X for variable(s) TOTEXP96. The variance of TOTEXP96 in that stratum is estimated by zero.

NOTE: There were 22601 observations read from the data set WORK.H12.

NOTE: The PROCEDURE SURVEYMEANS printed page 1.

```
101
102     TITLE4 '1997 DATA';
103
104     PROC SURVEYMEANS DATA= H20 NOBS SUMWGT MEAN STDERR CLM;
105         VAR TOTEXP97;
106         STRATA VARSTR97;
107         CLUSTER VARPSU97;
108         WEIGHT WTDPER97;
109         DOMAIN AGE97X;
110         FORMAT AGE97X AGEF. ;
111     RUN;
```

NOTE: Due to nonpositive weights, 1915 observation(s) were deleted.

NOTE: Only one cluster in a stratum in domain AGE97X for variable(s) TOTEXP97. The variance of TOTEXP97 in that stratum is estimated by zero.

NOTE: There were 34551 observations read from the data set WORK.H20.

NOTE: The PROCEDURE SURVEYMEANS printed page 2.

```
112
113     TITLE4 '1998 DATA';
114
115     PROC SURVEYMEANS DATA= H28 NOBS SUMWGT MEAN STDERR CLM;
116         VAR TOTEXP98;
117         STRATA VARSTR98;
118         CLUSTER VARPSU98;
119         WEIGHT WTDPER98;
120         DOMAIN AGE98X;
121         FORMAT AGE98X AGEF. ;
122     RUN;
```

NOTE: Due to nonpositive weights, 1119 observation(s) were deleted.

NOTE: There were 24072 observations read from the data set WORK.H28.

NOTE: The PROCEDURE SURVEYMEANS printed page 3.

```
123
124     TITLE4 '1999 DATA';
125
126     PROC SURVEYMEANS DATA= H38 NOBS SUMWGT MEAN STDERR CLM;
127         VAR TOTEXP99;
128         STRATA VARSTR99;
129         CLUSTER VARPSU99;
130         WEIGHT PERWT99F;
131         DOMAIN AGE99X;
```

```
132      FORMAT AGE99X AGEF. ;  
133      RUN;
```

NOTE: Due to nonpositive weights, 1053 observation(s) were deleted.

NOTE: Only one cluster in a stratum in domain AGE99X for variable(s) TOTEXP99. The variance of TOTEXP99 in that stratum is estimated by zero.

NOTE: There were 24618 observations read from the data set WORK.H38.

NOTE: The PROCEDURE SURVEYMEANS printed page 4.

```
134  
135      /***** POOL 1996 AND 1997 DATA          *****/  
136      /***** DIVIDE WEIGHT VARIABLE (POOLWT) by 2. *****/  
137  
138      DATA POOL9697 (KEEP= DUPERSID TOTEXP AGE POOLWT);
```

```
139      SET   H12 (RENAME=(WTDPER96 = POOLWT AGE96X = AGE))
140          H20 (RENAME=(WTDPER97 = POOLWT AGE97X = AGE));
141      IF POOLWT > 0
142          THEN POOLWT = POOLWT / 2 ;
143      RUN;
```

NOTE: There were 22601 observations read from the data set WORK.H12.
NOTE: There were 34551 observations read from the data set WORK.H20.
NOTE: The data set WORK.POOL9697 has 57152 observations and 4 variables.

```
144
145      /***** GET STRATUM AND PSU VARIABLES FROM HC-036.          *****/
146
147      DATA H36;
148          SET CMEPS.H36 (KEEP= DUPERSID STRA9602 PSU9602);
149      RUN;
```

NOTE: There were 115904 observations read from the data set CMEPS.H36.
NOTE: The data set WORK.H36 has 115904 observations and 3 variables.

```
150
151      PROC SORT DATA= POOL9697;
152          BY DUPERSID;
153      RUN;
```

NOTE: SAS sort was used.
NOTE: There were 57152 observations read from the data set WORK.POOL9697.
NOTE: The data set WORK.POOL9697 has 57152 observations and 4 variables.

```
154
155      DATA POOL9697;
156          MERGE POOL9697 (IN= A) H36 (IN= B);
157          BY DUPERSID;
158          IF A AND B;
159      RUN;
```

NOTE: There were 57152 observations read from the data set WORK.POOL9697.
NOTE: There were 115904 observations read from the data set WORK.H36.
NOTE: The data set WORK.POOL9697 has 57152 observations and 6 variables.

```
160
161      TITLE4 'POOLED 1996-1997 DATA';
162      TITLE5 'EXPENDITURES STANDARDIZED TO 1999 DOLLARS';
163
164      PROC SURVEYMEANS DATA= POOL9697 NOBS SUMWGT MEAN STDERR CLM;
165          VAR TOTEXP;
166          STRATA STRA9602;
167          CLUSTER PSU9602;
168          WEIGHT POOLWT;
169          DOMAIN AGE;
170          FORMAT AGE AGEF. ;
171      RUN;
```

NOTE: Due to nonpositive weights, 2945 observation(s) were deleted.

NOTE: Only one cluster in a stratum in domain AGE for variable(s) TOTEXP. The variance of TOTEXP in that stratum is estimated by zero.

NOTE: There were 57152 observations read from the data set WORK.POOL9697.

NOTE: The PROCEDURE SURVEYMEANS printed page 5.

```
172
173 /***** POOL 1998 AND 1999 DATA                *****/
174 /***** DIVIDE WEIGHT VARIABLE (POOLWT) by 2.   *****/
175
176 DATA POOL9899 (KEEP= DUPERSID TOTEXP AGE POOLWT);
177     SET H28 (RENAME=(WTDPER98 = POOLWT AGE98X = AGE))
178         H38 (RENAME=(TOTEXP99= TOTEXP PERWT99F = POOLWT
179                     AGE99X = AGE));
180     IF POOLWT > 0
```



```
181          THEN POOLWT = POOLWT / 2 ;
182          RUN;
```

NOTE: There were 24072 observations read from the data set WORK.H28.
NOTE: There were 24618 observations read from the data set WORK.H38.
NOTE: The data set WORK.POOL9899 has 48690 observations and 4 variables.

```
183
184          /***** MERGE ON *STRA9602* AND *PSU9602* FROM HC036          *****/
185
186          PROC SORT DATA= POOL9899;
187             BY DUPERSID;
188          RUN;
```

NOTE: SAS sort was used.
NOTE: There were 48690 observations read from the data set WORK.POOL9899.
NOTE: The data set WORK.POOL9899 has 48690 observations and 4 variables.

```
189
190          DATA POOL9899;
191             MERGE POOL9899 (IN= A) H36 (IN= B);
192             BY DUPERSID;
193             IF A AND B;
194          RUN;
```

NOTE: There were 48690 observations read from the data set WORK.POOL9899.
NOTE: There were 115904 observations read from the data set WORK.H36.
NOTE: The data set WORK.POOL9899 has 48690 observations and 6 variables.

```
195
196          TITLE4 'POOLED 1998-1999 DATA';
197          TITLE5 'EXPENDITURES STANDARDIZED TO 1999 DOLLARS';
198
199          PROC SURVEYMEANS DATA= POOL9899 NOBS SUMWGT MEAN STDERR CLM;
200             VAR TOTEXP;
201             STRATA STRA9602;
202             CLUSTER PSU9602;
203             WEIGHT POOLWT;
204             DOMAIN AGE;
205             FORMAT AGE AGEF. ;
206          RUN;
```

NOTE: Due to nonpositive weights, 2172 observation(s) were deleted.
NOTE: Only one cluster in a stratum in domain AGE for variable(s) TOTEXP. The variance of TOTEXP in that stratum is estimated by zero.
NOTE: There were 48690 observations read from the data set WORK.POOL9899.
NOTE: The PROCEDURE SURVEYMEANS printed page 6.

```
207
208
```

1996 DATA

The SURVEYMEANS Procedure

Data Summary

Number of Strata	140
Number of Clusters	874
Number of Observations	22601
Number of Observations Used	21571
Number of Obs with Nonpositive Weights	1030
Sum of Weights	268905490

Statistics

Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
TOTEXP96	TOTAL HEALTH CARE EXP 96	21571	268905490	2038.057443	69.230247	1902.144538	2173.970347

Domain Analysis: AGE96X

AGE96X	Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
OTHER	TOTEXP96	TOTAL HEALTH CARE EXP 96	19556	245065089	2133.877678	74.080135	1988.443466	2279.311889
AGE 0-5	TOTEXP96	TOTAL HEALTH CARE EXP 96	2015	23840400	1053.082608	157.270693	744.320836	1361.844380

1997 DATA

The SURVEYMEANS Procedure

Data Summary

Number of Strata	254
Number of Clusters	1036
Number of Observations	34551
Number of Observations Used	32636
Number of Obs with Nonpositive Weights	1915
Sum of Weights	271278585

Statistics

Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
TOTEXP97	TOTAL HEALTH CARE EXP 97	32636	271278585	2039.383044	58.715868	1924.123667	2154.642421

Domain Analysis: AGE97X

AGE97X	Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
OTHER	TOTEXP97	TOTAL HEALTH CARE EXP 97	29562	247550270	2162.348039	63.721715	2037.262172	2287.433905
AGE 0-5	TOTEXP97	TOTAL HEALTH CARE EXP 97	3074	23728315	756.526797	87.983451	583.814402	929.239192

1998 DATA

The SURVEYMEANS Procedure

Data Summary

Number of Strata	100
Number of Clusters	420
Number of Observations	24072
Number of Observations Used	22953
Number of Obs with Nonpositive Weights	1119
Sum of Weights	273533690

Statistics

Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
TOTEXP98	TOTAL HEALTH CARE EXP 98	22953	273533690	2049.459689	63.574965	1924.381986	2174.537392

Domain Analysis: AGE98X

AGE98X	Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
OTHER	TOTEXP98	TOTAL HEALTH CARE EXP 98	20845	249814919	2168.820660	67.787515	2035.455166	2302.186154
AGE 0-5	TOTEXP98	TOTAL HEALTH CARE EXP 98	2108	23718772	792.305575	102.970466	589.711232	994.899917

1999 DATA

The SURVEYMEANS Procedure

Data Summary

Number of Strata	143
Number of Clusters	460
Number of Observations	24618
Number of Observations Used	23565
Number of Obs with Nonpositive Weights	1053
Sum of Weights	276410767

Statistics

Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
TOTEXP99	TOTAL HEALTH CARE EXP 99	23565	276410767	2156.468447	62.723462	2033.061563	2279.875331

Domain Analysis: AGE99X

AGE99X	Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
OTHER	TOTEXP99	TOTAL HEALTH CARE EXP 99	21411	252576860	2279.761764	66.861336	2148.213712	2411.309816
AGE 0-5	TOTEXP99	TOTAL HEALTH CARE EXP 99	2154	23833907	849.882863	110.162846	633.126833	1066.638893

POOLED 1996-1997 DATA
 EXPENDITURES STANDARDIZED TO 1999 DOLLARS

The SURVEYMEANS Procedure

Data Summary

Number of Strata	125
Number of Clusters	378
Number of Observations	57152
Number of Observations Used	54207
Number of Obs with Nonpositive Weights	2945
Sum of Weights	270092038

Statistics

Variable	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
TOTEXP	54207	270092038	2140.370503	50.732728	2040.458239	2240.282767

Domain Analysis: AGE

AGE	Variable	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
OTHER	TOTEXP	49118	246307680	2255.111721	54.318542	2148.137610	2362.085833
AGE 0-5	TOTEXP	5089	23784358	952.125546	98.959794	757.228167	1147.022925

POOLED 1998-1999 DATA
 EXPENDITURES STANDARDIZED TO 1999 DOLLARS

The SURVEYMEANS Procedure

Data Summary

Number of Strata	125
Number of Clusters	373
Number of Observations	48690
Number of Observations Used	46518
Number of Obs with Nonpositive Weights	2172
Sum of Weights	274972228

Statistics

Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
TOTEXP	TOTAL HEALTH CARE EXP 99	46518	274972228	2125.757649	56.165925	2015.134611	2236.380687

Domain Analysis: AGE

AGE	Variable	Label	N	Sum of Weights	Mean	Std Error of Mean	Lower 95% CL for Mean	Upper 95% CL for Mean
OTHER	TOTEXP	TOTAL HEALTH CARE EXP 99	42256	251195889	2248.414665	59.884533	2130.467546	2366.361784
AGE 0-5	TOTEXP	TOTAL HEALTH CARE EXP 99	4262	23776339	829.892125	75.225824	681.723266	978.060984