APPENDIX K

SUDAAN CODE FOR VARIANCE ESTIMATION

```
*************************************************************
*  program:   SUDTEST.SAS
*  purpose:   to demonstrate SAS callable SUDAAN
*  written by Daisy Ewell and Don Jang
*  date 3/27/00
*  input: j:\8687\data1999\70recchk\hcsa99_3.sd2
*************************************************************
*;
options ps=79 ls=132;
libname in 'j:\8687\data1999\70recchk';
libname library  'j:\8887\data1999\70recchk\fmtlib';


***SORT FILE BY STRATUM****;
data hcs99a;
set in.hcs99a_3;
***make xregion = 7 to xregion = 8 for tables  ***;
if xregion = 7 then xregion = 8;
run;

PROC SORT DATA=HCS99A(keep=xregion h99027 h99061 WRWT99 stratum);
BY STRATUM;
RUN;


*************************************************************
if you want to estimate means
*************************************************************;
title 'Output file from SUDAAN for estimating means';
title2 'Average out-of-pocket money (Q61) by Region';

PROC DESCRIPT DATA=HCS99A DESIGN=STRWR NOPRINT;
 WEIGHT   WRWT99;        ******  sampling/FINAL SURVEY WEIGHT     ********;
 NEST STRATUM / missunit;
VAR  H99003;                 ******  VARIABLES TO BE ESTIMATED**;
* SUBPOPN XREGION;              ******specify domains to be reported;
 TABLES XREGION;
 SUBGROUP XREGION;
 LEVELS 16;
 OUTPUT MEAN SEMEAN deffmean/ TABLECELL=DEFAULT FILENAME=mnsDAT;
 ***SEMEAN=standard error and deffmean=design effect**;
RUN;

proc print data=mnsdat;
run;

*************************************************************
if you want to estimate percentage
*************************************************************;
title 'Output file from SUDAAN for estimating percentages';
title2 'Size of problem seeing a specialist (Q54) by Region';
title3 'Population limited to those who needed to see a specialist';
TITLE4 'PROC CROSSTAB';
PROC CROSSTAB DATA=HCS99A DESIGN=STRWR NOPRINT;
 WEIGHT   WRWT99;
 NEST STRATUM / missunit;
 SUBPOPN H99027=1 OR H99027=2 OR H99027=3;
 SUBGROUP H99027 XREGION;
 LEVELS 3 16;
```

```
 TABLES H99027*XREGION;              /*  DEP * INDEP */
 OUTPUT NSUM WSUM SEWGT COLPER SECOL
   / TABLECELL=DEFAULT FILENAME=OUTDAT;
RUN;

proc print data=outdat;
run;
```