

SUDAAN Analysis Examples Replication C12

```
* Sudaan Analysis Examples Replication for ASDA 2nd Edition
* Berglund April 2017
* Chapter 12 ;
* Note: Use of SUDAAN where possible but SAS for MI step. SUDAAN includes Hot Deck Methods for Imputation but No Sequential Regression
Method ;
```

```
options nodate nonumber ls=112 ps=67 ;
libname d "P:\asda 2\data sets\nhanes 2011_2012\" ;
data c12_nhanes ;
  set d.c12_impute_subset_nhanes1112 ;
  if age18p=1 and wtmecl2yr > 0 ;
  title "Section 12.6 MI and FI methods using NHANES 2011-2012 data" ;
  if bpxdil_1 >=90 then high_dbp =1 ; else if . < bpxdil_1 < 90 then high_dbp=0 ; else high_dbp=. ;
run ;
```

```
title "Examine Missing Data Problem" ;
proc mi nimpute=0 ;
  var bpxdil_1 bmxmbmi indfmpir marcat riagendr ridreth1 agec agecsq wtmecl2yr descodes ;
run ;
```

```
* Complete Case Analyses ;
* Run CC in Sudaan 11.0 ;
```

```
title "Weighted Complete Case Analysis for Table 12.3" ;
proc descript data=c12_nhanes filetype=sas ;
  nest _one_ ; weight wtmecl2yr ;
  var bpxdil_1 bmxmbmi indfmpir ;
  setenv decwidth=3 colwidth=11 ;
  print mean semean lowmean upmean ;
run ;
proc sort data=c12_nhanes ;
  by sdmvstra sdmvpsu ;
run ;
```

```
proc crosstab data=c12_nhanes filetype=sas deft1 ;
  nest sdmvstra sdmvpsu ;
  weight wtmecl2yr ;
  class age18p high_dbp / nofreq ;
  tables high dbp ;
  setenv decwidth=3 ;
run ;
```

```
proc rlogist data=C12_nhanes filetype=sas deft1 ;
  nest sdmvstra sdmvpsu ;
  weight wtmecl2yr ;
  class riagendr ridreth1 ;
  reflevel riagendr=1 ridreth1=1 ;
  model high dbp = ridreth1 riagendr agec agecsq ;
  setenv decwidth=3 ;
run ;
```

```
* MI Analyses ;
```

```
* Method 1: with Design Variables in Imputation Model ;
title "Impute Missing Data using PROC MI FCS: Method with Design Variables in Model for Blood Pressure" ;
```

```
proc mi data=c12_nhanes nimpute=5 out=outimp seed=2016 ;
  class marcat descodes riagendr ridreth1 ;
  var riagendr ridreth1 agec agecsq wtmecl2yr descodes bmxmbmi marcat indfmpir bpxdil_1 ;
  fcs logistic (marcat=riagendr ridreth1 agec agecsq bmxmbmi indfmpir bpxdil_1 /link=glogit) ;
  fcs reg (bmxmbmi=riagendr ridreth1 agec agecsq marcat indfmpir bpxdil_1) ;
  fcs reg (bpxdil_1=riagendr ridreth1 agec agecsq wtmecl2yr descodes bmxmbmi marcat indfmpir) ;
  fcs reg (indfmpir=riagendr ridreth1 agec agecsq bmxmbmi marcat bpxdil_1) ;
run ;
```

```
* Use imputed data set and create an indicator of high blood pressure ;
```

```
data outimp ;
  set outimp ;
  if bpxdil_1 >=90 then high_dbp=1 ; else high_dbp=0 ;
run ;
```

```
* output 5 data sets for use in Sudaan ;
data outimp1 outimp2 outimp3 outimp4 outimp5 ;
  set outimp ;
  if _imputation_ =1 then output outimp1 ;
  if _imputation_ =2 then output outimp2 ;
  if _imputation_ =3 then output outimp3 ;
  if _imputation_ =4 then output outimp4 ;
  if _imputation_ =5 then output outimp5 ;
```

```

run ;

proc sort ;
  by sdmvstra sdmvpsu ;
run ;

%macro it ;
%do i=1 %to 5 ;
  title "Weighted and Design Based Means for Imputation Method 1, Table 12.3, Data set is &i" ;
  proc descript data=outimp&i filetype=sas ;
  nest sdmvstra sdmvpsu ; weight wtmecl2yr ;
  var bpxdil_1 bmxbmi indfmpir ;
  setenv decwidth=3 colwidth=11 ;
  print mean ;
  run ;
%end ;
%mend ;
%it ;

* results for proportion high blood pressure over 5 imputed data sets ;
title "Obtain Imputed Weighted and Design-Based Means for High Blood Pressure, Table 12.4" ;
proc crosstab data=outimp1 filetype=sas mi_count=5 ;
nest sdmvstra sdmvpsu ;
weight wtmecl2yr ;
class high_dbp / nofreq;
tables high_dbp ;
setenv decwidth=3 ;
run ;

title "PROC SURVEYLOGISTIC using High Blood Pressure Imputed with Design Variables in Model, Table 12.5" ;
proc rlogist data=outimp1 mi_count=5 filetype=sas ;
nest sdmvstra sdmvpsu ;
weight wtmecl2yr ;
class riagendr ridreth1 ;
reflevel riagendr=1 ridreth1=1 ;
model high_dbp = ridreth1 riagendr agec agecsq ;
setenv decwidth=3 ;
run ;

* Method 2 : Impute without Design Variables in Imputation Model ;
title "Impute Missing Data using PROC MI FCS: Method without Design Variables in Model for Blood Pressure" ;
proc mi data=c12_nhanes nimpute=5 out=outimpb seed=2016 ;
class marcat riagendr ridreth1 ;
var riagendr ridreth1 agec agecsq bmxbmi marcat indfmpir bpxdil_1 ;
fcs logistic (marcat=riagendr ridreth1 agec agecsq bmxbmi indfmpir bpxdil_1 /link=glogit) ;
fcs reg (bmxbmi=riagendr ridreth1 agec agecsq marcat indfmpir bpxdil_1) ;
fcs reg (bpxdil_1=riagendr ridreth1 agec agecsq bmxbmi marcat indfmpir) ;
fcs reg (indfmpir=riagendr ridreth1 agec agecsq bmxbmi marcat bpxdil_1) ;
run ;

* use imputed data set and create an indicator of high blood pressure ;
data outimpb ;
set outimpb ;
if bpxdil_1 >=90 then high_dbp=1 ; else high_dbp=0 ;
run ;

* output 5 data sets for use in Sudaan ;
data outimpb1 outimpb2 outimpb3 outimpb4 outimpb5 ;
set outimpb ;
if _imputation_ =1 then output outimpb1 ;
if _imputation_ =2 then output outimpb2 ;
if _imputation_ =3 then output outimpb3 ;
if _imputation_ =4 then output outimpb4 ;
if _imputation_ =5 then output outimpb5 ;
run ;
proc sort ;
  by sdmvstra sdmvpsu ;
run ;

* Sudaan PROC CROSSTAB: for proportion high blood pressure combined using 5 imputed data sets ;
title "Obtain Imputed without Design Variables in Model, Weighted and Design-Based Means for High Blood Pressure, Table 12.4" ;
proc crosstab data=outimpb1 filetype=sas mi_count=5 ;
nest sdmvstra sdmvpsu ;
weight wtmecl2yr ;
class high_dbp / nofreq;
tables high_dbp ;
setenv decwidth=3 ;
run ;
title "PROC SURVEYLOGISTIC using High Blood Pressure Imputed without Design Variables in Model, Table 12.5" ;
proc rlogist data=outimpb1 mi_count=5 filetype=sas ;

```

```
nest sdmvstra sdmvpsu ; weight wtme2yr ;  
class riagendr ridreth1 ;  
reflevel riagendr=1 ridreth1=1 ;  
model high dbp = ridreth1 riagendr agec agecsq ;  
setenv decwidth=3 ;  
run ;
```

* Note: FEFI method results are not handled correctly for this method in SUDAAN, not demonstrated here ;

Output SUDAAN Analysis Examples Replication C12

Examine Missing Data Problem
The MI Procedure
Model Information

```

Data Set          WORK.C12_NHANES
Method            MCMC
Multiple Imputation Chain  Single Chain
Initial Estimates for MCMC  EM Posterior Mode
Start             Starting Value
Prior             Jeffreys
Number of Imputations      0
Number of Burn-in Iterations 200
Number of Iterations      100
Seed for random number generator 751857001
    
```

Missing Data Patterns

Group	bpxdil_1	bmx bmi	indfmpir	marcat	riagendr	ridreth1	agec	agecsq	wtmec2yr	decode	Freq
1	X	X	X	X	X	X	X	X	X	X	4416
2	X	X	X	.	X	X	X	X	X	X	230
3	X	X	.	X	X	X	X	X	X	X	369
4	X	X	.	.	X	X	X	X	X	X	31
5	X	.	X	X	X	X	X	X	X	X	48
6	X	.	X	.	X	X	X	X	X	X	6
7	X	.	.	X	X	X	X	X	X	X	12
8	.	X	X	X	X	X	X	X	X	X	386
9	.	X	X	.	X	X	X	X	X	X	22
10	.	X	.	X	X	X	X	X	X	X	62

Missing Data Patterns

Group	Percent	-----Group Means-----					
		bpxdil_1	bmx bmi	indfmpir	marcat	riagendr	ridreth1
1	78.65	71.566123	28.783243	2.444812	1.652400	1.498641	3.303895
2	4.10	62.234783	25.503478	1.606304	.	1.473913	3.186957
3	6.57	71.495935	27.984011	.	1.685637	1.463415	3.409214
4	0.55	60.516129	25.967742	.	.	1.516129	3.645161
5	0.85	69.458333	.	1.978750	1.687500	1.479167	3.145833
6	0.11	49.333333	.	0.561667	.	2.000000	2.833333
7	0.21	66.666667	.	.	1.916667	1.583333	3.333333
8	6.87	.	29.594560	2.159689	1.639896	1.621762	3.217617
9	0.39	.	28.477273	1.695455	.	1.454545	3.136364
10	1.10	.	27.659677	.	1.419355	1.580645	3.451613

Missing Data Patterns

Group	-----Group Means-----			
	agec	agecsq	wtmec2yr	decode
1	2.017802	315.481111	43501	960.012908
2	-27.811681	773.737724	27595	962.830435
3	5.590640	365.713016	31449	960.598916
4	-24.613224	784.324845	26241	959.193548
5	11.874007	456.168680	31873	971.375000
6	-27.688493	766.874858	17700	966.833333
7	12.811507	440.273597	20355	972.500000
8	1.046395	313.345611	40647	959.948187
9	-27.627887	763.498474	29447	961.590909
10	6.967421	323.666696	32778	959.919355

Examine Missing Data Problem

The MI Procedure

Missing Data Patterns

Group	bpxdil_1	bmx bmi	indfmpir	marcat	riagendr	ridreth1	agec	agecsq	wtmec2yr	decode	Freq
11	.	X	.	.	X	X	X	X	X	X	9
12	.	.	X	X	X	X	X	X	X	X	18
13	.	.	X	.	X	X	X	X	X	X	2
14	.	.	.	X	X	X	X	X	X	X	4

Missing Data Patterns

		-----Group Means-----					
Group	Percent	bpxdil_1	bmx bmi	indfmpir	marcat	riagendr	ridreth1
11	0.16	.	27.111111	.	.	1.444444	2.333333
12	0.32	.	.	2.062222	1.666667	1.888889	3.666667
13	0.04	.	.	0.670000	.	2.000000	4.500000
14	0.07	.	.	.	1.500000	1.250000	3.000000

Missing Data Patterns

		-----Group Means-----			
Group		agec	agecsq	wtmec2yr	decode
11		-17.021826	710.631456	15863	968.444444
12		5.089285	401.258831	35520	967.111111
13		-27.855160	776.159912	14766	991.500000
14		16.394840	594.478257	18287	921.750000

Weighted Complete Case Analysis for Table 12.3

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
 Stratification Variables(s): _ONE_
 Primary Sampling Unit: Observation Number

Number of observations read : 5615 Weighted count :232002539
 Denominator degrees of freedom : 5614

Date: 05-20-2017
 Time: 18:22:34

SUDAAN

Page: 1
 Table: 1

Variance Estimation Method: Taylor Series (WR)
 by: Variable, SUDAAN Reserved Variable One.

Variable	SUDAAN Reserved Variable One		
		Total	1
BPXDII1_1	Mean	71.609	71.609
	SE Mean	0.217	0.217
	Lower 95% Limit		
	Mean	71.183	71.183
	Upper 95% Limit		
Body Mass Index (kg/m**2)	Mean	28.623	28.623
	SE Mean	0.121	0.121
	Lower 95% Limit		
	Mean	28.385	28.385
	Upper 95% Limit		
Ratio of family income to poverty	Mean	2.859	2.859
	SE Mean	0.032	0.032
	Lower 95% Limit		
	Mean	2.796	2.796
	Upper 95% Limit		
	Mean	2.922	2.922

Weighted Complete Case Analysis for Table 12.3

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
 Stratification Variables(s): SDMVSTRA
 Primary Sampling Unit: SDMVPSU

Number of observations read : 5615 Weighted count :232002539
 Denominator degrees of freedom : 17

Date: 05-20-2017
 Time: 18:22:35

SUDAAN

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 Table: 1

Variance Estimation Method: Taylor Series (WR)
 by: HIGH_DBP.

		HIGH_DBP		
		Total	0	1
Sample Size		5112.000	4795.000	317.000
Weighted Size		*****	*****	*****
SE Weighted		*****	*****	*****
DEFF Weighted		238.625	128.153	8.192
Row Percent		100.000	93.918	6.082
SE Row Percent		0.000	0.796	0.796
Lower 95% Limit				
ROWPER		.	92.005	4.604
Upper 95% Limit				
ROWPER		.	95.396	7.995
DEFF Row Percent				
#1		.	5.714	5.714
Col Percent		100.000	93.918	6.082
SE Col Percent		0.000	0.796	0.796
Lower 95% Limit				
COLPER		.	92.005	4.604
Upper 95% Limit				
COLPER		.	95.396	7.995
DEFF Col Percent				
#1		.	5.714	5.714
Tot Percent		100.000	93.918	6.082
SE Tot Percent		0.000	0.796	0.796
Lower 95% Limit				
TOTPER		.	92.005	4.604
Upper 95% Limit				
TOTPER		.	95.396	7.995
DEFF Tot Percent				
#1		.	5.714	5.714

Weighted Complete Case Analysis for Table 12.3

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
Stratification Variables(s): SDMVSTRA
Primary Sampling Unit: SDMVPSU

Number of zero responses : 4795
Number of non-zero responses : 317

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5112 Weighted count:212747914
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File C12_NHANES contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 252 records
Minimum cluster size is 64 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis

0: Sample Count 4795 Population Count 199808299
1: Sample Count 317 Population Count 12939615

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.018141

-2 * Normalized Log-Likelihood with Intercepts Only : 2343.56
-2 * Normalized Log-Likelihood Full Model : 2249.97
Approximate Chi-Square (-2 * Log-L Ratio) : 93.59
Degrees of Freedom : 7

Note: The approximate Chi-Square is not adjusted for clustering.
Refer to hypothesis test table for adjusted test.

Date: 05-20-2017
Time: 18:22:35

SUDAAN

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Table: 1

Frequencies and Values for CLASS Variables
by: Gender.

Gender	Frequency	Value
Ordered Position: 1	2772	1
Ordered Position: 2	2843	2

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SUDAAN

Page: 2
Table: 1

Frequencies and Values for CLASS Variables
by: 1=mex 2=oth hisp 3=white 4=black 5=other.

1=mex 2=oth hisp 3=white 4=black 5=other	Frequency	Value
Ordered Position: 1	569	1
Ordered Position: 2	577	2
Ordered Position: 3	2014	3
Ordered Position: 4	1505	4
Ordered Position: 5	950	5

Variance Estimation Method: Taylor Series (WR)
 SE Method: Robust (Binder, 1983)
 Working Correlations: Independent
 Link Function: Logit
 Response variable HIGH_DBP: HIGH_DBP
 by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	DEFF Beta #1	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0
Intercept	-2.250	0.741	0.199	-2.669	-1.831	-11.334	0.000
1=mex 2=oth hisp 3=white 4=black 5=other							
1	0.000	.	0.000	0.000	0.000	.	.
2	-0.726	0.355	0.245	-1.242	-0.209	-2.963	0.009
3	0.131	0.905	0.225	-0.343	0.605	0.585	0.567
4	0.658	0.868	0.246	0.138	1.178	2.672	0.016
5	0.050	0.608	0.245	-0.467	0.566	0.204	0.841
Gender							
1	0.000	.	0.000	0.000	0.000	.	.
2	-0.547	2.973	0.208	-0.985	-0.108	-2.632	0.017
AGEC	0.008	2.677	0.007	-0.006	0.023	1.215	0.241
AGECSQ	-0.002	1.202	0.000	-0.002	-0.001	-5.838	0.000

Variance Estimation Method: Taylor Series (WR)
 SE Method: Robust (Binder, 1983)
 Working Correlations: Independent
 Link Function: Logit
 Response variable HIGH_DBP: HIGH_DBP
 by: Contrast.

Contrast	Degrees of Freedom	Wald F	P-value Wald F
OVERALL MODEL	8.000	130.207	0.000
MODEL MINUS INTERCEPT	7.000	10.752	0.000
INTERCEPT	.	.	.
RIDRETH1	4.000	12.562	0.000
RIAGENDR	1.000	6.927	0.017
AGEC	1.000	1.477	0.241
AGECSQ	1.000	34.085	0.000

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Logit
Response variable HIGH_DBP: HIGH_DBP
by: Independent Variables and Effects.

Independent Variables and Effects	Odds Ratio	Lower 95% Limit OR	Upper 95% Limit OR
Intercept	0.105	0.069	0.160
1=mex 2=oth hisp 3=white 4=black 5=other			
1	1.000	1.000	1.000
2	0.484	0.289	0.811
3	1.140	0.710	1.831
4	1.931	1.149	3.248
5	1.051	0.627	1.762
Gender			
1	1.000	1.000	1.000
2	0.579	0.373	0.897
AGEC	1.008	0.994	1.023
AGECSQ	0.998	0.998	0.999

Impute Missing Data using PROC MI FCS: Method with Design Variables in Model for Blood Pressure

The MI Procedure

Model Information

```
Data Set          WORK.C12_NHANES
Method            FCS
Number of Imputations 5
Number of Burn-in Iterations 20
Seed for random number generator 2016
```

FCS Model Specification

```
Method            Imputed Variables
Regression        agec agecsq wtmecl2yr bmx bmi indfmpir bpxdil_1
Logistic Regression marcat
Discriminant Function riagendr ridrethl descodes
```

Missing Data Patterns

Group	riagendr	ridrethl	agec	agecsq	wtmecl2yr	descodes	bmx bmi	marcat	indfmpir	bpxdil_1	Freq
1	X	X	X	X	X	X	X	X	X	X	4416
2	X	X	X	X	X	X	X	X	X	.	386
3	X	X	X	X	X	X	X	X	.	X	369
4	X	X	X	X	X	X	X	X	.	.	62
5	X	X	X	X	X	X	X	.	X	X	230
6	X	X	X	X	X	X	X	.	X	.	22
7	X	X	X	X	X	X	X	.	.	X	31
8	X	X	X	X	X	X	X	.	.	.	9
9	X	X	X	X	X	X	.	X	X	X	48
10	X	X	X	X	X	X	.	X	X	.	18
11	X	X	X	X	X	X	.	X	.	X	12
12	X	X	X	X	X	X	.	X	.	.	4
13	X	X	X	X	X	X	.	.	X	X	6
14	X	X	X	X	X	X	.	.	X	.	2

Missing Data Patterns

Group	Percent	-----Group Means-----					
		agec	agecsq	wtmecl2yr	bmx bmi	indfmpir	bpxdil_1
1	78.65	2.017802	315.481111	43501	28.783243	2.444812	71.566123
2	6.87	1.046395	313.345611	40647	29.594560	2.159689	.
3	6.57	5.590640	365.713016	31449	27.984011	.	71.495935
4	1.10	6.967421	323.666696	32778	27.659677	.	.
5	4.10	-27.811681	773.737724	27595	25.503478	1.606304	62.234783
6	0.39	-27.627887	763.498474	29447	28.477273	1.695455	.
7	0.55	-24.613224	784.324845	26241	25.967742	.	60.516129
8	0.16	-17.021826	710.631456	15863	27.111111	.	.
9	0.85	11.874007	456.168680	31873	.	1.978750	69.458333
10	0.32	5.089285	401.258831	35520	.	2.062222	.
11	0.21	12.811507	440.273597	20355	.	.	66.666667
12	0.07	16.394840	594.478257	18287	.	.	.
13	0.11	-27.688493	766.874858	17700	.	0.561667	49.333333
14	0.04	-27.855160	776.159912	14766	.	0.670000	.

Impute Missing Data using PROC MI FCS: Method with Design Variables in Model for Blood Pressure

The MI Procedure

Variance Information (5 Imputations)

Variable	-----Variance-----			DF	Relative Increase in Variance	Fraction Missing Information	Relative Efficiency
	Between	Within	Total				
bmx bmi	0.000015534	0.008528	0.008546	5562.7	0.002186	0.002184	0.999563
indfmpir	0.000018173	0.000495	0.000517	1584.1	0.044060	0.043052	0.991463
bpxdil_1	0.000790	0.025441	0.026390	1969.9	0.037272	0.036555	0.992742

Parameter Estimates (5 Imputations)

Variable	Mean	Std Error	95% Confidence Limits		DF	Minimum	Maximum
bmx bmi	28.613520	0.092447	28.43229	28.79475	5562.7	28.608348	28.618139
indfmpir	2.363266	0.022732	2.31868	2.40785	1584.1	2.359006	2.368532
bpxdil_1	71.037972	0.162449	70.71938	71.35656	1969.9	70.993406	71.069428

Parameter Estimates (5 Imputations)

Variable	Mu0	t for H0:	
		Mean=Mu0	Pr > t
bmx bmi	0	309.51	<.0001
indfmpir	0	103.96	<.0001
bpxdil_1	0	437.30	<.0001

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
 Stratification Variables(s): SDMVSTRA
 Primary Sampling Unit: SDMVPSU

Number of observations read : 5615 Weighted count :232002539
 Denominator degrees of freedom : 17

Date: 05-20-2017
 Time: 18:24:36

SUDAAN

Page: 1
 Table: 1

Variance Estimation Method: Taylor Series (WR)
 by: Variable, SUDAAN Reserved Variable One.

Variable		SUDAAN Reserved Variable One	
		Total	1
BPXDII_1	Mean	71.643	71.643
Body Mass Index (kg/m**2)	Mean	28.618	28.618
Ratio of family income to poverty	Mean	2.835	2.835

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
 Stratification Variables(s): SDMVSTRA
 Primary Sampling Unit: SDMVPSU

Number of observations read : 5615 Weighted count :232002539
 Denominator degrees of freedom : 17

Date: 05-20-2017
 Time: 18:24:37

SUDAAN

Page: 1
 Table: 1

Variance Estimation Method: Taylor Series (WR)
 by: Variable, SUDAAN Reserved Variable One.

Variable		SUDAAN Reserved Variable One	
		Total	1
BPXDII_1	Mean	71.584	71.584
Body Mass Index (kg/m**2)	Mean	28.631	28.631
Ratio of family income to poverty	Mean	2.816	2.816

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
 Stratification Variables(s): SDMVSTRA
 Primary Sampling Unit: SDMVPSU

Number of observations read : 5615 Weighted count :232002539
 Denominator degrees of freedom : 17

Date: 05-20-2017
 Time: 18:24:37

SUDAAN

Page: 1
 Table: 1

Variance Estimation Method: Taylor Series (WR)
 by: Variable, SUDAAN Reserved Variable One.

Variable		SUDAAN Reserved Variable One	
		Total	1
BPXDII_1	Mean	71.575	71.575
Body Mass Index (kg/m**2)	Mean	28.624	28.624
Ratio of family income to poverty	Mean	2.820	2.820

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
 Stratification Variables(s): SDMVSTRA
 Primary Sampling Unit: SDMVPSU

Number of observations read : 5615 Weighted count :232002539
 Denominator degrees of freedom : 17

Date: 05-20-2017
 Time: 18:24:38

SUDAAN

Page: 1
 Table: 1

Variance Estimation Method: Taylor Series (WR)
 by: Variable, SUDAAN Reserved Variable One.

Variable		SUDAAN Reserved Variable One	
		Total	1
BPXDII_1	Mean	71.631	71.631
Body Mass Index (kg/m**2)	Mean	28.622	28.622
Ratio of family income to poverty	Mean	2.827	2.827

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
 Stratification Variables(s): SDMVSTRA
 Primary Sampling Unit: SDMVPSU

Number of observations read : 5615 Weighted count :232002539
 Denominator degrees of freedom : 17

Date: 05-20-2017
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SUDAAN

Page: 1
 Table: 1

Variance Estimation Method: Taylor Series (WR)
 by: Variable, SUDAAN Reserved Variable One.

Variable		SUDAAN Reserved Variable One	
		Total	1
BPXDII_1	Mean	71.624	71.624
Body Mass Index (kg/m**2)	Mean	28.619	28.619
Ratio of family income to poverty	Mean	2.817	2.817

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
Stratification Variables(s): SDMVSTRA
Primary Sampling Unit: SDMVPSU

Processing data for set 1 of imputed variables:

Processing data for set 2 of imputed variables:

Processing data for set 3 of imputed variables:

Processing data for set 4 of imputed variables:

Processing data for set 5 of imputed variables:

Processing data for set 1 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Processing data for set 2 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Processing data for set 3 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Processing data for set 4 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Processing data for set 5 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Variance Estimation Method: Taylor Series (WR) Using Multiply Imputed Data
 Results for Summary Over All Imputations
 by: HIGH_DBP.

		HIGH_DBP		
		Total	0	1
Sample Size		5615.000	5269.200	345.800
Weighted Size		*****	*****	*****
SE Weighted		*****	*****	*****
Row Percent		100.000	93.936	6.064
SE Row Percent		0.000	0.764	0.764
Lower 95% Limit				
ROWPER		.	92.087	4.625
Upper 95% Limit				
ROWPER		.	95.375	7.913
Col Percent		100.000	93.936	6.064
SE Col Percent		0.000	0.764	0.764
Lower 95% Limit				
COLPER		.	92.087	4.625
Upper 95% Limit				
COLPER		.	95.375	7.913
Tot Percent		100.000	93.936	6.064
SE Tot Percent		0.000	0.764	0.764
Lower 95% Limit				
TOTPER		.	92.087	4.625
Upper 95% Limit				
TOTPER		.	95.375	7.913

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
Stratification Variables(s): SDMVSTRA
Primary Sampling Unit: SDMVPSU

Processing data for set 1 of imputed variables:

Processing data for set 2 of imputed variables:

Processing data for set 3 of imputed variables:

Processing data for set 4 of imputed variables:

Processing data for set 5 of imputed variables:

Processing data for set 1 of imputed variables:

Number of zero responses : 5274
Number of non-zero responses : 341

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMPL contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP

Based on observations used in the analysis
0: Sample Count 5274 Population Count 218333668
1: Sample Count 341 Population Count 13668871

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.017791

Processing data for set 2 of imputed variables:

Number of zero responses : 5273
Number of non-zero responses : 342

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMP2 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis
0: Sample Count 5273 Population Count 217821153
1: Sample Count 342 Population Count 14181386

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.019098

Processing data for set 3 of imputed variables:

Number of zero responses : 5264
Number of non-zero responses : 351

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMP3 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis
0: Sample Count 5264 Population Count 217901658
1: Sample Count 351 Population Count 14100881

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.017872

Processing data for set 4 of imputed variables:

Number of zero responses : 5271
Number of non-zero responses : 344

Independence parameters have converged in 6 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMP4 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis

0:	Sample Count	5271	Population Count	217788517
1:	Sample Count	344	Population Count	14214022

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.015205

Processing data for set 5 of imputed variables:

Number of zero responses : 5264
Number of non-zero responses : 351

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMP5 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP

Based on observations used in the analysis

0: Sample Count 5264 Population Count 217826567
1: Sample Count 351 Population Count 14175972

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.020182

Overall degrees of freedom (Rubin): 8.17

-2 * Normalized Log-Likelihood with Intercepts Only : 2582.80
-2 * Normalized Log-Likelihood Full Model : 2468.32
Approximate Chi-Square (-2 * Log-L Ratio) : 114.48
Degrees of Freedom : 7

Note: The approximate Chi-Square is not adjusted for clustering.
Refer to hypothesis test table for adjusted test.

Date: 05-20-2017 SUDAAN
Time: 18:24:40

Page: 1
Table: 1

Frequencies and Values for CLASS Variables
Results for Summary Over All Imputations
by: Gender.

Gender	Frequency	Value
Ordered		
Position:		
1	2772	1
Ordered		
Position:		
2	2843	2

Date: 05-20-2017
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SUDAAN

Page: 2
Table: 1

Frequencies and Values for CLASS Variables
Results for Summary Over All Imputations
by: 1=mex 2=oth hisp 3=white 4=black 5=other.

```

-----
1=mex 2=oth
  hisp
  3=white
  4=black
  5=other
Frequency      Value
-----
Ordered
  Position:
  1              569      1
Ordered
  Position:
  2              577      2
Ordered
  Position:
  3             2014      3
Ordered
  Position:
  4             1505      4
Ordered
  Position:
  5              950      5
-----

```

Date: 05-20-2017
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SUDAAN

Page: 3
Table: 1

Variance Estimation Method: Taylor Series (WR) Using Multiply Imputed Data
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Logit
Response variable HIGH_DBP: HIGH_DBP
Results for Summary Over All Imputations
by: Independent Variables and Effects.

```

-----
Independent
  Variables and
  Effects
Beta
  Coeff.
SE Beta
Lower 95%
  Limit Beta
Upper 95%
  Limit Beta
T-Test B=0
P-value
  T-Test
  B=0
MI DDF
  Beta
-----
Intercept
1=mex 2=oth hisp
  3=white 4=black
  5=other
  1
  2
  3
  4
  5
Gender
  1
  2
AGEC
AGECSQ
-----

```

Independent Variables and Effects	Beta Coeff.	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	MI DDF Beta
Intercept	-2.249	0.204	-2.695	-1.804	-11.004	0.000	12.071
1=mex 2=oth hisp 3=white 4=black 5=other							
1	0.000	0.000	.	.	.	.	.
2	-0.620	0.276	-1.253	0.013	-2.249	0.054	8.171
3	0.137	0.228	-0.354	0.628	0.601	0.558	13.291
4	0.649	0.244	0.124	1.174	2.657	0.019	13.669
5	0.022	0.260	-0.539	0.583	0.084	0.934	13.042
Gender							
1	0.000	0.000	.	.	.	.	.
2	-0.552	0.201	-0.985	-0.119	-2.744	0.016	13.495
AGEC	0.009	0.007	-0.006	0.024	1.333	0.203	14.385
AGECSQ	-0.002	0.000	-0.002	-0.001	-5.459	0.000	17.000

Date: 05-20-2017
 Time: 18:24:40

SUDAAN

Page: 4
 Table: 1

Variance Estimation Method: Taylor Series (WR) Using Multiply Imputed Data
 SE Method: Robust (Binder, 1983)
 Working Correlations: Independent
 Link Function: Logit
 Response variable HIGH_DBP: HIGH_DBP
 Results for Summary Over All Imputations
 by: Contrast.

```
-----
```

Contrast	Degrees of Freedom	Wald F	P-value Wald F
OVERALL MODEL	8.000	124.178	0.000
MODEL MINUS INTERCEPT	7.000	7.549	0.005
INTERCEPT	.	.	.
RIDRETH1	4.000	7.325	0.008
RIAGENDR	1.000	7.529	0.025
AGEC	1.000	1.777	0.219
AGECSQ	1.000	29.798	0.001

```
-----
```

Date: 05-20-2017
 Time: 18:24:40

SUDAAN

Page: 5
 Table: 1

Variance Estimation Method: Taylor Series (WR) Using Multiply Imputed Data
 SE Method: Robust (Binder, 1983)
 Working Correlations: Independent
 Link Function: Logit
 Response variable HIGH_DBP: HIGH_DBP
 Results for Summary Over All Imputations
 by: Independent Variables and Effects.

```
-----
```

Independent Variables and Effects	Odds Ratio	Lower 95% Limit OR	Upper 95% Limit OR
Intercept	0.105	0.068	0.165
1=mex 2=oth hisp 3=white 4=black 5=other			
1	1.000	.	.
2	0.538	0.286	1.013
3	1.147	0.702	1.874
4	1.913	1.132	3.235
5	1.022	0.583	1.792
Gender			
1	1.000	.	.
2	0.576	0.374	0.888
AGEC	1.009	0.994	1.024
AGECSQ	0.998	0.998	0.999

```
-----
```

Impute Missing Data using PROC MI FCS: Method without Design Variables in Model for Blood Pressure

The MI Procedure

Model Information

```
Data Set                WORK.C12_NHANES
Method                  FCS
Number of Imputations   5
Number of Burn-in Iterations 20
Seed for random number generator 2016
```

FCS Model Specification

```
Method                Imputed Variables
Regression            agec agecsq bmx bmi indfmpir bpxdil_1
Logistic Regression   marcat
Discriminant Function riagendr ridrethl
```

Missing Data Patterns

Group	riagendr	ridrethl	agec	agecsq	bmx bmi	marcat	indfmpir	bpxdil_1	Freq	Percent
1	X	X	X	X	X	X	X	X	4416	78.65
2	X	X	X	X	X	X	X	.	386	6.87
3	X	X	X	X	X	X	.	X	369	6.57
4	X	X	X	X	X	X	.	.	62	1.10
5	X	X	X	X	X	.	X	X	230	4.10
6	X	X	X	X	X	.	X	.	22	0.39
7	X	X	X	X	X	.	.	X	31	0.55
8	X	X	X	X	X	.	.	.	9	0.16
9	X	X	X	X	.	X	X	X	48	0.85
10	X	X	X	X	.	X	X	.	18	0.32
11	X	X	X	X	.	X	.	X	12	0.21
12	X	X	X	X	.	X	.	.	4	0.07
13	X	X	X	X	.	.	X	X	6	0.11
14	X	X	X	X	.	.	X	.	2	0.04

Missing Data Patterns

Group	-----Group Means-----				
	agec	agecsq	bmx bmi	indfmpir	bpxdil_1
1	2.017802	315.481111	28.783243	2.444812	71.566123
2	1.046395	313.345611	29.594560	2.159689	.
3	5.590640	365.713016	27.984011	.	71.495935
4	6.967421	323.666696	27.659677	.	.
5	-27.811681	773.737724	25.503478	1.606304	62.234783
6	-27.627887	763.498474	28.477273	1.695455	.
7	-24.613224	784.324845	25.967742	.	60.516129
8	-17.021826	710.631456	27.111111	.	.
9	11.874007	456.168680	.	1.978750	69.458333
10	5.089285	401.258831	.	2.062222	.
11	12.811507	440.273597	.	.	66.666667
12	16.394840	594.478257	.	.	.
13	-27.688493	766.874858	.	0.561667	49.333333
14	-27.855160	776.159912	.	0.670000	.

Impute Missing Data using PROC MI FCS: Method without Design Variables in Model for Blood Pressure

The MI Procedure

Variance Information (5 Imputations)

Variable	-----Variance-----			DF	Relative Increase in Variance	Fraction Missing Information	Relative Efficiency
	Between	Within	Total				
bmx bmi	0.000028639	0.008538	0.008572	5466.7	0.004025	0.004017	0.999197
indfmpir	0.000021374	0.000494	0.000519	1254.5	0.051948	0.050540	0.989993
bpxdil_1	0.000069393	0.025466	0.025549	5511.8	0.003270	0.003265	0.999348

Parameter Estimates (5 Imputations)

Variable	Mean	Std Error	95% Confidence Limits		DF	Minimum	Maximum
bmx bmi	28.620785	0.092585	28.43928	28.80229	5466.7	28.615226	28.627661
indfmpir	2.365173	0.022790	2.32046	2.40988	1254.5	2.360924	2.370887
bpxdil_1	70.996988	0.159841	70.68364	71.31034	5511.8	70.990128	71.011414

Parameter Estimates (5 Imputations)

Variable	Mu0	t for H0:	
		Mean=Mu0	Pr > t
bmx bmi	0	309.13	<.0001
indfmpir	0	103.78	<.0001
bpxdil_1	0	444.17	<.0001

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design

Sample Weight: WTMEC2YR
Stratification Variables(s): SDMVSTRA
Primary Sampling Unit: SDMVPSU

Processing data for set 1 of imputed variables:

Processing data for set 2 of imputed variables:

Processing data for set 3 of imputed variables:

Processing data for set 4 of imputed variables:

Processing data for set 5 of imputed variables:

Processing data for set 1 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Processing data for set 2 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Processing data for set 3 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Processing data for set 4 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Processing data for set 5 of imputed variables:

Number of observations read : 5615 Weighted count :232002539
Denominator degrees of freedom : 17

Variance Estimation Method: Taylor Series (WR) Using Multiply Imputed Data
 Results for Summary Over All Imputations
 by: HIGH_DBP.

		HIGH_DBP		
		Total	0	1
Sample Size		5615.000	5268.600	346.400
Weighted Size		*****	*****	*****
SE Weighted		*****	*****	*****
Row Percent		100.000	93.834	6.166
SE Row Percent		0.000	0.712	0.712
Lower 95% Limit				
ROWPER		.	92.131	4.812
Upper 95% Limit				
ROWPER		.	95.188	7.869
Col Percent		100.000	93.834	6.166
SE Col Percent		0.000	0.712	0.712
Lower 95% Limit				
COLPER		.	92.131	4.812
Upper 95% Limit				
COLPER		.	95.188	7.869
Tot Percent		100.000	93.834	6.166
SE Tot Percent		0.000	0.712	0.712
Lower 95% Limit				
TOTPER		.	92.131	4.812
Upper 95% Limit				
TOTPER		.	95.188	7.869

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR) Design
Sample Weight: WTMEC2YR
Stratification Variables(s): SDMVSTRA
Primary Sampling Unit: SDMVPSU

Processing data for set 1 of imputed variables:

Processing data for set 2 of imputed variables:

Processing data for set 3 of imputed variables:

Processing data for set 4 of imputed variables:

Processing data for set 5 of imputed variables:

Processing data for set 1 of imputed variables:

Number of zero responses : 5262
Number of non-zero responses : 353

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMPB1 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis
0: Sample Count 5262 Population Count 217408749
1: Sample Count 353 Population Count 14593790

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.019877

Processing data for set 2 of imputed variables:

Number of zero responses : 5267
Number of non-zero responses : 348

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMPB2 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis
0: Sample Count 5267 Population Count 217872168
1: Sample Count 348 Population Count 14130371

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.018355

Processing data for set 3 of imputed variables:

Number of zero responses : 5273
Number of non-zero responses : 342

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMPB3 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis
0: Sample Count 5273 Population Count 217573901
1: Sample Count 342 Population Count 14428638

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.019353

Processing data for set 4 of imputed variables:

Number of zero responses : 5275
Number of non-zero responses : 340

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMPB4 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis
0: Sample Count 5275 Population Count 217952970
1: Sample Count 340 Population Count 14049569

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.019555

Processing data for set 5 of imputed variables:

Number of zero responses : 5266
Number of non-zero responses : 349

Independence parameters have converged in 7 iterations.

Number of observations read : 5615 Weighted count:232002539
Observations used in the analysis : 5615 Weighted count:232002539
Denominator degrees of freedom : 17

Maximum number of estimable parameters for the model is 8

File OUTIMPB5 contains 31 Clusters
31 clusters were used to fit the model
Maximum cluster size is 263 records
Minimum cluster size is 78 records

Sample and Population Counts for Response Variable HIGH_DBP
Based on observations used in the analysis
0: Sample Count 5266 Population Count 217678952
1: Sample Count 349 Population Count 14323587

R-Square for dependent variable HIGH_DBP (Cox & Snell, 1989): 0.019145

Overall degrees of freedom (Rubin): 11.81

-2 * Normalized Log-Likelihood with Intercepts Only : 2602.28
-2 * Normalized Log-Likelihood Full Model : 2493.74
Approximate Chi-Square (-2 * Log-L Ratio) : 108.54
Degrees of Freedom : 7

Note: The approximate Chi-Square is not adjusted for clustering.
Refer to hypothesis test table for adjusted test.

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Frequencies and Values for CLASS Variables
Results for Summary Over All Imputations
by: Gender.

```
-----  
Gender          Frequency    Value  
-----  
Ordered  
  Position:  
  1              2772         1  
Ordered  
  Position:  
  2              2843         2  
-----
```

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Frequencies and Values for CLASS Variables
Results for Summary Over All Imputations
by: 1=mex 2=oth hisp 3=white 4=black 5=other.

```
-----  
1=mex 2=oth  
  hisp  
  3=white  
  4=black  
  5=other          Frequency    Value  
-----  
Ordered  
  Position:  
  1              569         1  
Ordered  
  Position:  
  2              577         2  
Ordered  
  Position:  
  3             2014         3  
Ordered  
  Position:  
  4             1505         4  
Ordered  
  Position:  
  5              950         5  
-----
```

Variance Estimation Method: Taylor Series (WR) Using Multiply Imputed Data
 SE Method: Robust (Binder, 1983)
 Working Correlations: Independent
 Link Function: Logit
 Response variable HIGH_DBP: HIGH_DBP
 Results for Summary Over All Imputations
 by: Independent Variables and Effects.

Independent Variables and Effects	Beta Coeff.	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0	MI DDF Beta
Intercept	-2.254	0.204	-2.694	-1.813	-11.036	0.000	13.221
1=mex 2=oth hisp 3=white 4=black 5=other							
1	0.000	0.000	.	.	.	.	.
2	-0.642	0.272	-1.231	-0.053	-2.364	0.035	12.587
3	0.185	0.213	-0.270	0.641	0.871	0.398	14.529
4	0.658	0.250	0.118	1.197	2.635	0.021	12.951
5	0.071	0.248	-0.470	0.612	0.287	0.779	11.806
Gender							
1	0.000	0.000	.	.	.	.	.
2	-0.513	0.193	-0.925	-0.100	-2.657	0.018	14.622
AGEC	0.009	0.007	-0.005	0.023	1.407	0.179	15.210
AGECSQ	-0.002	0.000	-0.002	-0.001	-6.207	0.000	17.000

Variance Estimation Method: Taylor Series (WR) Using Multiply Imputed Data
 SE Method: Robust (Binder, 1983)
 Working Correlations: Independent
 Link Function: Logit
 Response variable HIGH_DBP: HIGH_DBP
 Results for Summary Over All Imputations
 by: Contrast.

Contrast	Degrees of Freedom	Wald F	P-value Wald F
OVERALL MODEL	8.000	139.152	0.000
MODEL MINUS INTERCEPT	7.000	11.500	0.000
INTERCEPT	.	.	.
RIDRETH1	4.000	10.030	0.001
RIAGENDR	1.000	7.060	0.021
AGEC	1.000	1.980	0.185
AGECSQ	1.000	38.524	0.000

Variance Estimation Method: Taylor Series (WR) Using Multiply Imputed Data
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Logit
Response variable HIGH_DBP: HIGH_DBP
Results for Summary Over All Imputations
by: Independent Variables and Effects.

Independent Variables and Effects	Odds Ratio	Lower 95% Limit OR	Upper 95% Limit OR
Intercept	0.105	0.068	0.163
1=mex 2=oth hisp 3=white 4=black 5=other			
1	1.000	.	.
2	0.526	0.292	0.948
3	1.204	0.763	1.898
4	1.930	1.126	3.310
5	1.074	0.625	1.845
Gender			
1	1.000	.	.
2	0.599	0.397	0.904
AGEC	1.009	0.995	1.024
AGECSQ	0.998	0.998	0.999