

**CHIS\_73\_BinomRegress**  
**CHIS\_MLE\_CURRENTASTHMA**  
**PROC SURVEYLOGISTIC - May 1, 2019**

**The LOGISTIC Procedure**

Model Information		
Data Set	CHIS.CHIS_DATA_BINOMIAL_BC2	
Response Variable	nonasthmatic	Non-Asthmatic
Number of Response Levels	2	
Weight Variable	frwgt0	
Model	generalized logit	
Optimization Technique	Newton-Raphson	

Number of Observations Read	119710
Number of Observations Used	119710
Sum of Weights Read	26984609
Sum of Weights Used	26984609

Response Profile			
Ordered Value	nonasthmatic	Total Frequency	Total Weight
1	1 Non-Asthmatic	106120	24218720
2	2 Current Asthmatic	13590	2765889

*Logits modeled use nonasthmatic='1 Non-Asthmatic' as the reference category.*

Class Level Information						
Class	Value	Design Variables				
SRSEX	Female	1				
	Male	-1				
agegroup	Later Adult (65+)	-1	-1			
	Middle Aged (40-64)	1	0			
	Young Adult (18-39)	0	1			
CITIZEN2	Naturalized Citizen	-1	-1			
	Non-Citizen	1	0			
	US-Born Citizen	0	1			
race	African American	1	0	0	0	0
	American Indian / Alaska Native	0	1	0	0	0
	Asian	0	0	1	0	0
	Latino	0	0	0	1	0
	Multiracial / Other	0	0	0	0	1
	White	-1	-1	-1	-1	-1
childhh	Children in HH	-1				
	No Children in HH	1				

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Class Level Information					
Class	Value	Design Variables			
pfpl	0-99% FPL	1			
	100% FPL and Above	-1			
INS	No	-1			
	Yes	1			

Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	17838929	17195516
SC	17838938	17195652
-2 Log L	17838927	17195488

R-Square	0.9954	Max-rescaled R-Square	0.9954
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Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	643438.357	13	<.0001
Score	606594.697	13	<.0001
Wald	574639.274	13	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
SRSEX	1	130501.021	<.0001
agegroup	2	12958.0901	<.0001
CITIZEN2	2	169127.662	<.0001
race	5	42730.8201	<.0001
childhh	1	16860.8032	<.0001
pfpl	1	46050.7756	<.0001
INS	1	28322.1909	<.0001

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Analysis of Maximum Likelihood Estimates								
Parameter		nonasthmatic	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept		2 Current Asthmatic	1	-2.4314	0.00195	1553245.07	<.0001	
SRSEX	Female	2 Current Asthmatic	1	0.2397	0.000664	130501.021	<.0001	1.9831
agegroup	Middle Aged (40-64)	2 Current Asthmatic	1	0.0484	0.000925	2741.8255	<.0001	0.2910
agegroup	Young Adult (18-39)	2 Current Asthmatic	1	0.0878	0.000980	8023.1684	<.0001	0.5206
CITIZEN2	Non-Citizen	2 Current Asthmatic	1	-0.4090	0.00171	56928.5172	<.0001	-1.9878
CITIZEN2	US-Born Citizen	2 Current Asthmatic	1	0.5217	0.00127	167592.104	<.0001	3.3622
race	African American	2 Current Asthmatic	1	0.0793	0.00235	1133.4643	<.0001	0.3850
race	American Indian / Alaska Native	2 Current Asthmatic	1	0.4378	0.00584	5619.3612	<.0001	1.8252
race	Asian	2 Current Asthmatic	1	-0.3226	0.00231	19571.3158	<.0001	-1.8566
race	Latino	2 Current Asthmatic	1	-0.2766	0.00178	24195.3457	<.0001	-2.0097
race	Multiracial / Other	2 Current Asthmatic	1	0.2373	0.00305	6059.2025	<.0001	1.0569
childhh	No Children in HH	2 Current Asthmatic	1	0.0991	0.000763	16860.8032	<.0001	0.7608
pfpl	0-99% FPL	2 Current Asthmatic	1	0.1857	0.000866	46050.7756	<.0001	1.1512
INS	Yes	2 Current Asthmatic	1	0.1889	0.00112	28322.1909	<.0001	1.1033

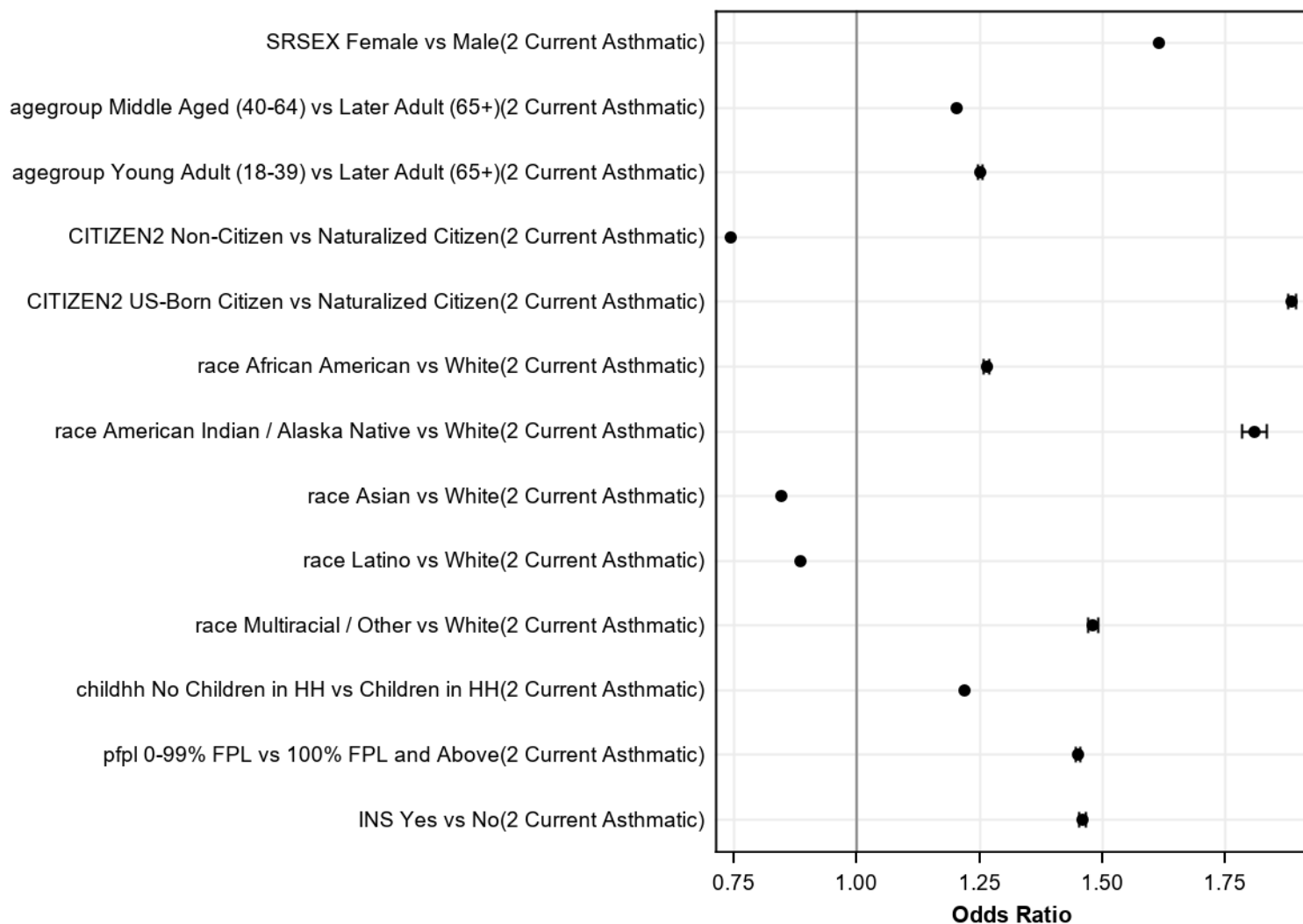
Odds Ratio Estimates				
Effect	nonasthmatic	Point Estimate	95% Wald Confidence Limits	
SRSEX Female vs Male	2 Current Asthmatic	1.615	1.611	1.619
agegroup Middle Aged (40-64) vs Later Adult (65+)	2 Current Asthmatic	1.203	1.198	1.207
agegroup Young Adult (18-39) vs Later Adult (65+)	2 Current Asthmatic	1.251	1.246	1.256
CITIZEN2 Non-Citizen vs Naturalized Citizen	2 Current Asthmatic	0.744	0.739	0.748
CITIZEN2 US-Born Citizen vs Naturalized Citizen	2 Current Asthmatic	1.886	1.878	1.894
race African American vs White	2 Current Asthmatic	1.264	1.258	1.270
race American Indian / Alaska Native vs White	2 Current Asthmatic	1.809	1.785	1.834
race Asian vs White	2 Current Asthmatic	0.846	0.842	0.850
race Latino vs White	2 Current Asthmatic	0.886	0.883	0.889
race Multiracial / Other vs White	2 Current Asthmatic	1.481	1.471	1.491

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Odds Ratio Estimates				
Effect	nonasthmatic	Point Estimate	95% Wald Confidence Limits	
childhh No Children in HH vs Children in HH	2 Current Asthmatic	1.219	1.216	1.223
pfpl 0-99% FPL vs 100% FPL and Above	2 Current Asthmatic	1.450	1.445	1.455
INS Yes vs No	2 Current Asthmatic	1.459	1.453	1.466

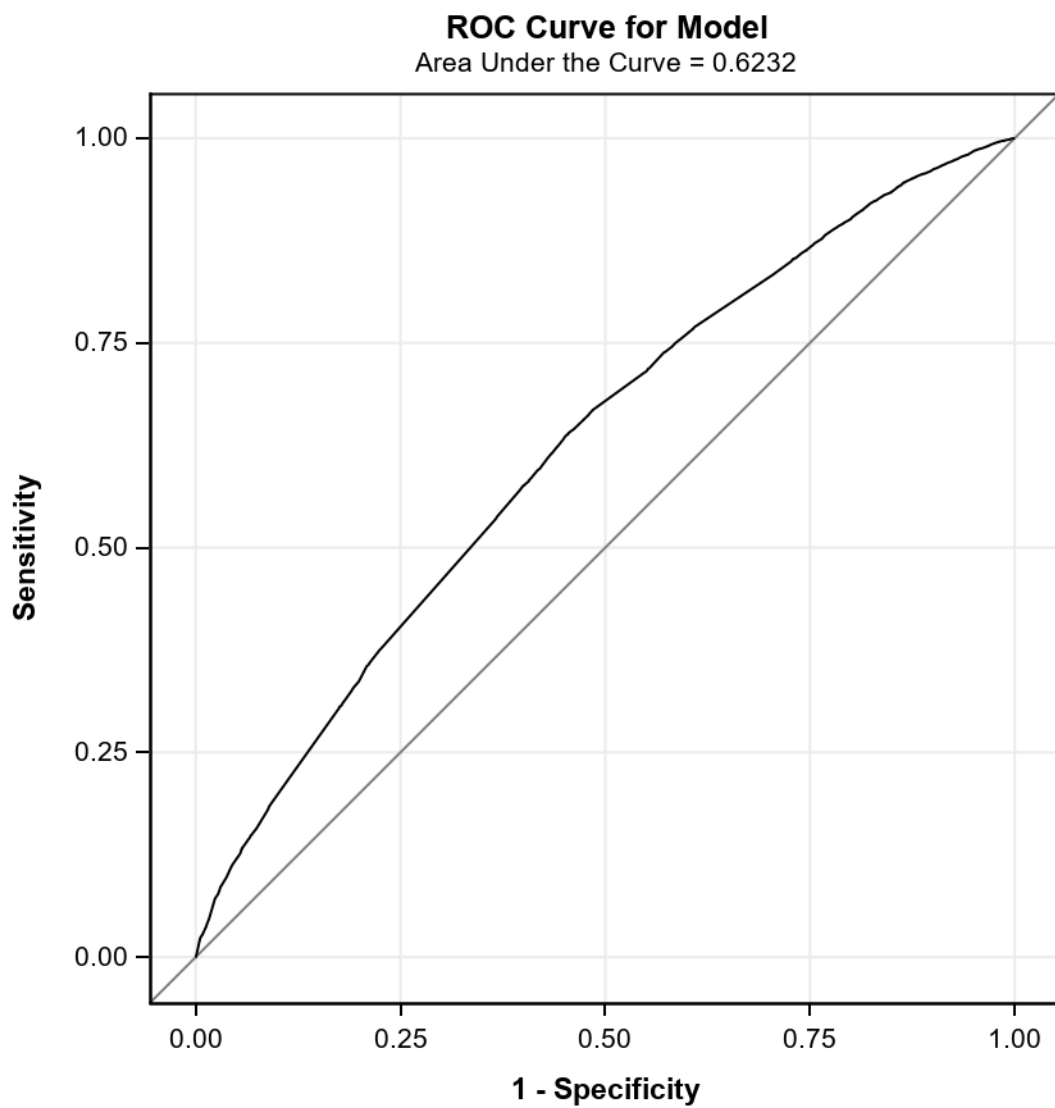
**Odds Ratios with 95% Wald Confidence Limits**



Association of Predicted Probabilities and Observed Responses			
Percent Concordant	60.1	Somers' D	0.246
Percent Discordant	35.5	Gamma	0.258
Percent Tied	4.4	Tau-a	0.050
Pairs	1442170800	c	0.623

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Estimated Covariance Matrix				
Parameter	Intercept_2 Current Asthmatic	SRSEXFemale_2 Current Asthmatic	agegroupMiddle Aged (40-64)_2 Cu	agegroupYoung Adult (18-39)_2 Cu
Intercept_2 Current Asthmatic	3.806E-6	-1.12E-7	-3.22E-7	-2.63E-7
SRSEXFemale_2 Current Asthmatic	-1.12E-7	4.403E-7	1.37E-8	3.085E-8
agegroupMiddle Aged (40-64)_2 Cu	-3.22E-7	1.37E-8	8.553E-7	-1.69E-7
agegroupYoung Adult (18-39)_2 Cu	-2.63E-7	3.085E-8	-1.69E-7	9.611E-7
CITIZEN2Non-Citizen_2 Current As	5.6E-7	1.763E-8	-3.32E-8	-307E-12
CITIZEN2US-Born Citizen_2 Curren	-8.89E-7	-2.39E-9	1.203E-7	-2.36E-7
raceAfrican American_2 Current A	-8.68E-7	-1.01E-8	-8.81E-8	1.024E-7
raceAmerican Indian / Alaska Nat	6.128E-6	2.342E-8	-5.48E-8	2.722E-7
raceAsian_2 Current Asthmatic	-1.66E-6	-2.32E-8	9.865E-8	-2.94E-7
raceLatino_2 Current Asthmatic	-2.16E-6	-2.63E-9	6.12E-8	-1.88E-7
raceMultiracial / Other_2 Curren	9.794E-8	5.397E-9	1.74E-8	-8.76E-8
childhhNo Children in HH_2 Curre	-2.88E-7	3.663E-8	1.009E-7	1.383E-7
pfpl0-99% FPL_2 Current Asthmati	2.886E-7	-3.34E-8	2.95E-8	-4.69E-8
INSYes_2 Current Asthmatic	-9.27E-7	-3.96E-8	4.286E-8	1.377E-7

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Estimated Covariance Matrix					
Parameter	CITIZEN2Non-Citizen_2 Current As	CITIZEN2US-Born Citizen_2 Curren	raceAfrican American_2 Current A	raceAmerican Indian / Alaska Nat	raceAsian_2 Current Asthmatic
Intercept_2 Current Asthmatic	5.6E-7	-8.89E-7	-8.68E-7	6.128E-6	-1.66E-6
SRSEXFemale_2 Current Asthmatic	1.763E-8	-2.39E-9	-1.01E-8	2.342E-8	-2.32E-8
agegroupMiddle Aged (40-64)_2 Cu	-3.32E-8	1.203E-7	-8.81E-8	-5.48E-8	9.865E-8
agegroupYoung Adult (18-39)_2 Cu	-307E-12	-2.36E-7	1.024E-7	2.722E-7	-2.94E-7
CITIZEN2Non-Citizen_2 Current As	2.938E-6	-1.09E-6	1.369E-7	2.164E-7	-1.13E-7
CITIZEN2US-Born Citizen_2 Curren	-1.09E-6	1.624E-6	-3.41E-7	-5.03E-7	9.341E-7
raceAfrican American_2 Current A	1.369E-7	-3.41E-7	5.545E-6	-6.78E-6	1.839E-7
raceAmerican Indian / Alaska Nat	2.164E-7	-5.03E-7	-6.78E-6	0.000034	-7.06E-6
raceAsian_2 Current Asthmatic	-1.13E-7	9.341E-7	1.839E-7	-7.06E-6	5.319E-6
raceLatino_2 Current Asthmatic	-4.68E-7	4.863E-7	7.341E-7	-6.41E-6	1.282E-6
raceMultiracial / Other_2 Curren	1.5E-7	-2.72E-7	-6.9E-7	-7.8E-6	-6.72E-7
childhhNo Children in HH_2 Curre	1.319E-7	-1.31E-7	-2.66E-9	1.037E-7	-1.05E-7
pfpl0-99% FPL_2 Current Asthmati	-1.85E-7	1.29E-7	-9.13E-8	-1.36E-7	1.301E-7
INSYes_2 Current Asthmatic	2.475E-7	-1.53E-7	-3.07E-8	8.841E-8	-1.11E-7

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Estimated Covariance Matrix					
Parameter	raceLatino_2 Current Asthmatic	raceMultiracial / Other_2 Curren	childhhNo Children in HH_2 Curre	pfpl0-99% FPL_2 Current Asthmati	INSYes_2 Current Asthmatic
Intercept_2 Current Asthmatic	-2.16E-6	9.794E-8	-2.88E-7	2.886E-7	-9.27E-7
SRSEXFemale_2 Current Asthmatic	-2.63E-9	5.397E-9	3.663E-8	-3.34E-8	-3.96E-8
agegroupMiddle Aged (40-64)_2 Cu	6.12E-8	1.74E-8	1.009E-7	2.95E-8	4.286E-8
agegroupYoung Adult (18-39)_2 Cu	-1.88E-7	-8.76E-8	1.383E-7	-4.69E-8	1.377E-7
CITIZEN2Non-Citizen_2 Current As	-4.68E-7	1.5E-7	1.319E-7	-1.85E-7	2.475E-7
CITIZEN2US-Born Citizen_2 Curren	4.863E-7	-2.72E-7	-1.31E-7	1.29E-7	-1.53E-7
raceAfrican American_2 Current A	7.341E-7	-6.9E-7	-2.66E-9	-9.13E-8	-3.07E-8
raceAmerican Indian / Alaska Nat	-6.41E-6	-7.8E-6	1.037E-7	-1.36E-7	8.841E-8
raceAsian_2 Current Asthmatic	1.282E-6	-6.72E-7	-1.05E-7	1.301E-7	-1.11E-7
raceLatino_2 Current Asthmatic	3.162E-6	-1.81E-7	3.176E-8	-7.79E-8	8.543E-8
raceMultiracial / Other_2 Curren	-1.81E-7	9.292E-6	-1.91E-8	4.127E-8	1.141E-8
childhhNo Children in HH_2 Curre	3.176E-8	-1.91E-8	5.825E-7	1.185E-8	7.723E-8
pfpl0-99% FPL_2 Current Asthmati	-7.79E-8	4.127E-8	1.185E-8	7.492E-7	5.587E-8
INSYes_2 Current Asthmatic	8.543E-8	1.141E-8	7.723E-8	5.587E-8	1.26E-6



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Estimated Correlation Matrix				
Parameter	Intercept_2 Current Asthmatic	SRSEXFemale_2 Current Asthmatic	agegroupMiddle Aged (40-64)_2 Cu	agegroupYoung Adult (18-39)_2 Cu
Intercept_2 Current Asthmatic	1.0000	-0.0862	-0.1785	-0.1376
SRSEXFemale_2 Current Asthmatic	-0.0862	1.0000	0.0223	0.0474
agegroupMiddle Aged (40-64)_2 Cu	-0.1785	0.0223	1.0000	-0.1860
agegroupYoung Adult (18-39)_2 Cu	-0.1376	0.0474	-0.1860	1.0000
CITIZEN2Non-Citizen_2 Current As	0.1675	0.0155	-0.0209	-0.0002
CITIZEN2US-Born Citizen_2 Curren	-0.3576	-0.0028	0.1021	-0.1887
raceAfrican American_2 Current A	-0.1889	-0.0064	-0.0405	0.0443
raceAmerican Indian / Alaska Nat	0.5378	0.0060	-0.0101	0.0475
raceAsian_2 Current Asthmatic	-0.3697	-0.0152	0.0463	-0.1300
raceLatino_2 Current Asthmatic	-0.6230	-0.0022	0.0372	-0.1079
raceMultiracial / Other_2 Curren	0.0165	0.0027	0.0062	-0.0293
childhhNo Children in HH_2 Curre	-0.1934	0.0723	0.1429	0.1848
pfpl0-99% FPL_2 Current Asthmati	0.1709	-0.0582	0.0368	-0.0553
INSYes_2 Current Asthmatic	-0.4234	-0.0532	0.0413	0.1251

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Estimated Correlation Matrix					
Parameter	CITIZEN2Non-Citizen_2 Current As	CITIZEN2US-Born Citizen_2 Curren	raceAfrican American_2 Current A	raceAmerican Indian / Alaska Nat	raceAsian_2 Current Asthmatic
Intercept_2 Current Asthmatic	0.1675	-0.3576	-0.1889	0.5378	-0.3697
SRSEXFemale_2 Current Asthmatic	0.0155	-0.0028	-0.0064	0.0060	-0.0152
agegroupMiddle Aged (40-64)_2 Cu	-0.0209	0.1021	-0.0405	-0.0101	0.0463
agegroupYoung Adult (18-39)_2 Cu	-0.0002	-0.1887	0.0443	0.0475	-0.1300
CITIZEN2Non-Citizen_2 Current As	1.0000	-0.4999	0.0339	0.0216	-0.0286
CITIZEN2US-Born Citizen_2 Curren	-0.4999	1.0000	-0.1135	-0.0676	0.3178
raceAfrican American_2 Current A	0.0339	-0.1135	1.0000	-0.4930	0.0339
raceAmerican Indian / Alaska Nat	0.0216	-0.0676	-0.4930	1.0000	-0.5238
raceAsian_2 Current Asthmatic	-0.0286	0.3178	0.0339	-0.5238	1.0000
raceLatino_2 Current Asthmatic	-0.1534	0.2146	0.1753	-0.6176	0.3125
raceMultiracial / Other_2 Curren	0.0287	-0.0701	-0.0961	-0.4379	-0.0956
childhhNo Children in HH_2 Curre	0.1009	-0.1347	-0.0015	0.0233	-0.0597
pfpl0-99% FPL_2 Current Asthmati	-0.1245	0.1170	-0.0448	-0.0270	0.0652
INSYes_2 Current Asthmatic	0.1286	-0.1067	-0.0116	0.0135	-0.0429

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Estimated Correlation Matrix					
Parameter	raceLatino_2 Current Asthmatic	raceMultiracial / Other_2 Curren	childhhNo Children in HH_2 Curre	pfpl0-99% FPL_2 Current Asthmati	INSYes_2 Current Asthmatic
Intercept_2 Current Asthmatic	-0.6230	0.0165	-0.1934	0.1709	-0.4234
SRSEXFemale_2 Current Asthmatic	-0.0022	0.0027	0.0723	-0.0582	-0.0532
agegroupMiddle Aged (40-64)_2 Cu	0.0372	0.0062	0.1429	0.0368	0.0413
agegroupYoung Adult (18-39)_2 Cu	-0.1079	-0.0293	0.1848	-0.0553	0.1251
CITIZEN2Non-Citizen_2 Current As	-0.1534	0.0287	0.1009	-0.1245	0.1286
CITIZEN2US-Born Citizen_2 Curren	0.2146	-0.0701	-0.1347	0.1170	-0.1067
raceAfrican American_2 Current A	0.1753	-0.0961	-0.0015	-0.0448	-0.0116
raceAmerican Indian / Alaska Nat	-0.6176	-0.4379	0.0233	-0.0270	0.0135
raceAsian_2 Current Asthmatic	0.3125	-0.0956	-0.0597	0.0652	-0.0429
raceLatino_2 Current Asthmatic	1.0000	-0.0333	0.0234	-0.0506	0.0428
raceMultiracial / Other_2 Curren	-0.0333	1.0000	-0.0082	0.0156	0.0033
childhhNo Children in HH_2 Curre	0.0234	-0.0082	1.0000	0.0179	0.0901
pfpl0-99% FPL_2 Current Asthmati	-0.0506	0.0156	0.0179	1.0000	0.0575
INSYes_2 Current Asthmatic	0.0428	0.0033	0.0901	0.0575	1.0000

Classification Table									
	Correct		Incorrect		Percentages				
Prob Level	Event	Non-Event	Event	Non-Event	Correct	Sensi- tivity	Speci- ficity	Pos Pred	Neg Pred
0.852	0	106E3	0	13590	88.6	0.0	100.0	.	88.6

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### Predicted Probabilities for nonasthmatic=2 Current Asthmatic

At CITIZEN2=Naturalized Citizen race=White childhh=Children in HH pfpl=100% FPL and Above INS=No

