

**CHIS\_72\_BinomRegress**  
**CHIS CHIS\_DATA\_BINOMIAL\_BC**  
**PROC SURVEYLOGISTIC - April 28, 2019**

**The LOGISTIC Procedure**

Model Information		
Data Set	CHIS.CHIS_DATA_BINOMIAL_BC	
Response Variable	nonasthmatic	Non-Asthmatic
Number of Response Levels	2	
Weight Variable	fnwgt0	
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				
lateradult	Later Adult	-1				
	Young / Middle Aged	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				
pfpl	0-99% FPL	1				

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Class Level Information					
Class	Value	Design Variables			
	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	17196235
SC	17838938	17196361
-2 Log L	17838927	17196209

R-Square	0.9953	Max-rescaled R-Square	0.9953
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Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	642717.957	12	<.0001
Score	606129.768	12	<.0001
Wald	574166.241	12	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
SRSEX	1	130236.865	<.0001
lateradult	1	12226.5114	<.0001
CITIZEN2	2	178842.091	<.0001
race	5	42019.6456	<.0001
childhh	1	16657.5277	<.0001
pfpl	1	46918.4306	<.0001
INS	1	27893.9625	<.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	-2.4662	0.00205	1451192.63	<.0001	
SRSEX	Female	2 Current Asthmatic	1	0.2394	0.000663	130236.865	<.0001	1.9806
lateradult	Young / Middle Aged	2 Current Asthmatic	1	0.1007	0.000910	12226.5114	<.0001	0.6203
CITIZEN2	Non-Citizen	2 Current Asthmatic	1	-0.4096	0.00171	57092.7877	<.0001	-1.9909
CITIZEN2	US-Born Citizen	2 Current Asthmatic	1	0.5283	0.00125	177993.622	<.0001	3.4044
race	African American	2 Current Asthmatic	1	0.0758	0.00235	1038.7244	<.0001	0.3680
race	American Indian / Alaska Native	2 Current Asthmatic	1	0.4319	0.00584	5474.3129	<.0001	1.8003
race	Asian	2 Current Asthmatic	1	-0.3155	0.00229	18954.9043	<.0001	-1.8152
race	Latino	2 Current Asthmatic	1	-0.2720	0.00177	23611.9590	<.0001	-1.9765
race	Multiracial / Other	2 Current Asthmatic	1	0.2392	0.00305	6160.5870	<.0001	1.0654
childhh	No Children in HH	2 Current Asthmatic	1	0.0984	0.000763	16657.5277	<.0001	0.7556
pfpl	0-99% FPL	2 Current Asthmatic	1	0.1872	0.000864	46918.4306	<.0001	1.1600
INS	Yes	2 Current Asthmatic	1	0.1872	0.00112	27893.9625	<.0001	1.0932

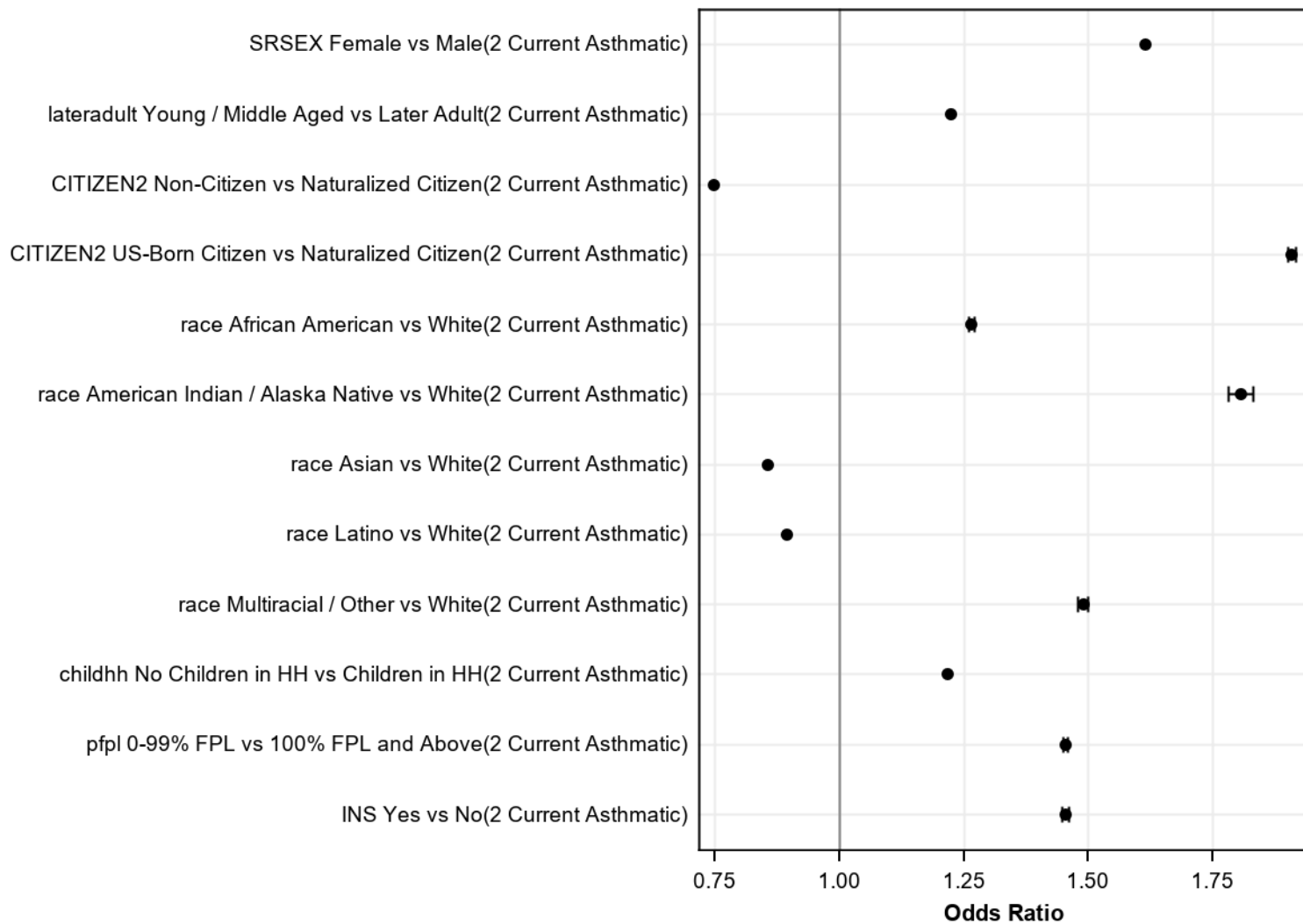
Odds Ratio Estimates				
Effect		nonasthmatic	Point Estimate	95% Wald Confidence Limits
SRSEX	Female vs Male	2 Current Asthmatic	1.614	1.610 1.618
lateradult	Young / Middle Aged vs Later Adult	2 Current Asthmatic	1.223	1.219 1.227
CITIZEN2	Non-Citizen vs Naturalized Citizen	2 Current Asthmatic	0.748	0.743 0.752
CITIZEN2	US-Born Citizen vs Naturalized Citizen	2 Current Asthmatic	1.910	1.901 1.918
race	African American vs White	2 Current Asthmatic	1.265	1.259 1.271
race	American Indian / Alaska Native vs White	2 Current Asthmatic	1.806	1.782 1.831
race	Asian vs White	2 Current Asthmatic	0.855	0.851 0.860
race	Latino vs White	2 Current Asthmatic	0.893	0.890 0.896
race	Multiracial / Other vs White	2 Current Asthmatic	1.490	1.480 1.500
childhh	No Children in HH vs Children in HH	2 Current Asthmatic	1.218	1.214 1.221

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Odds Ratio Estimates					
Effect		nonasthmatic	Point Estimate	95% Wald Confidence Limits	
pfpl	0-99% FPL vs 100% FPL and Above	2 Current Asthmatic	1.454	1.449	1.459
INS	Yes vs No	2 Current Asthmatic	1.454	1.448	1.461

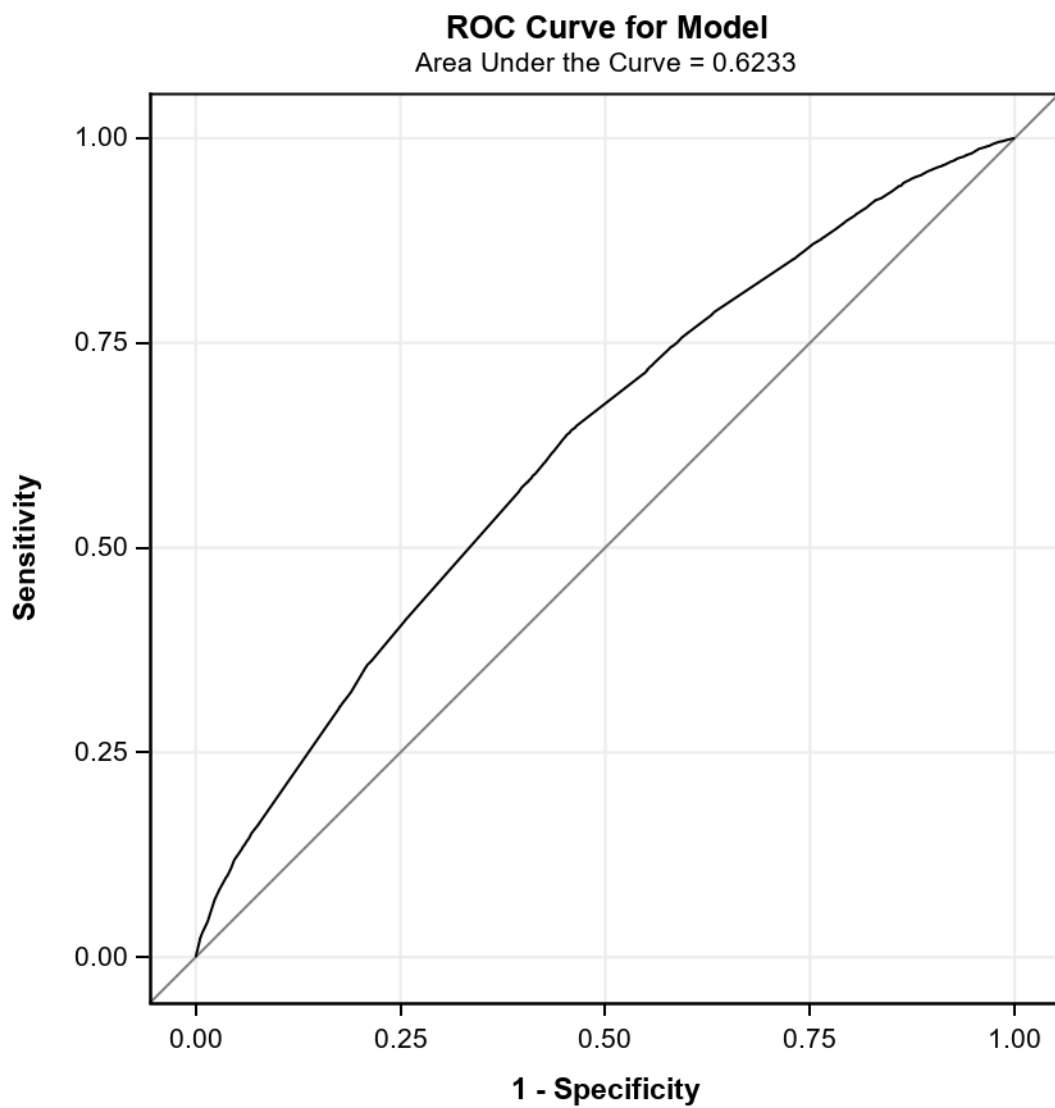
**Odds Ratios with 95% Wald Confidence Limits**



Association of Predicted Probabilities and Observed Responses			
Percent Concordant	59.7	Somers' D	0.247
Percent Discordant	35.1	Gamma	0.260
Percent Tied	5.2	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	lateradultYoung / Middle Aged_2	CITIZEN2Non-Citizen_2 Current As
Intercept_2 Current Asthmatic	4.191E-6	-1.23E-7	-7.18E-7	5.679E-7
SRSEXFemale_2 Current Asthmatic	-1.23E-7	4.4E-7	3.255E-8	1.725E-8
lateradultYoung / Middle Aged_2	-7.18E-7	3.255E-8	8.288E-7	-2.6E-8
CITIZEN2Non-Citizen_2 Current As	5.679E-7	1.725E-8	-2.6E-8	2.938E-6
CITIZEN2US-Born Citizen_2 Curren	-8.57E-7	6.81E-10	-7.28E-8	-1.09E-6
raceAfrican American_2 Current A	-8.73E-7	-1.12E-8	3.415E-9	1.343E-7
raceAmerican Indian / Alaska Nat	6.071E-6	2.062E-8	1.5E-7	2.115E-7
raceAsian_2 Current Asthmatic	-1.61E-6	-2E-8	-1.31E-7	-1.07E-7
raceLatino_2 Current Asthmatic	-2.13E-6	-533E-12	-8.57E-8	-4.65E-7
raceMultiracial / Other_2 Curren	1.171E-7	6.019E-9	-4.83E-8	1.52E-7
childhhNo Children in HH_2 Curre	-3.48E-7	3.586E-8	1.778E-7	1.312E-7
pfpl0-99% FPL_2 Current Asthmati	2.935E-7	-3.27E-8	-1.02E-8	-1.84E-7
INSYes_2 Current Asthmatic	-9.73E-7	-4.04E-8	1.319E-7	2.471E-7

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Estimated Covariance Matrix					
Parameter	CITIZEN2US-Born Citizen_2 Curren	raceAfrican American_2 Current A	raceAmerican Indian / Alaska Nat	raceAsian_2 Current Asthmatic	raceLatino_2 Current Asthmatic
Intercept_2 Current Asthmatic	-8.57E-7	-8.73E-7	6.071E-6	-1.61E-6	-2.13E-6
SRSEXFemale_2 Current Asthmatic	6.81E-10	-1.12E-8	2.062E-8	-2E-8	-533E-12
lateradultYoung / Middle Aged_2	-7.28E-8	3.415E-9	1.5E-7	-1.31E-7	-8.57E-8
CITIZEN2Non-Citizen_2 Current As	-1.09E-6	1.343E-7	2.115E-7	-1.07E-7	-4.65E-7
CITIZEN2US-Born Citizen_2 Curren	1.568E-6	-3.11E-7	-4.5E-7	8.718E-7	4.471E-7
raceAfrican American_2 Current A	-3.11E-7	5.529E-6	-6.81E-6	2.175E-7	7.556E-7
raceAmerican Indian / Alaska Nat	-4.5E-7	-6.81E-6	0.000034	-7E-6	-6.38E-6
raceAsian_2 Current Asthmatic	8.718E-7	2.175E-7	-7E-6	5.25E-6	1.238E-6
raceLatino_2 Current Asthmatic	4.471E-7	7.556E-7	-6.38E-6	1.238E-6	3.134E-6
raceMultiracial / Other_2 Curren	-2.9E-7	-6.8E-7	-7.78E-6	-6.92E-7	-1.93E-7
childhhNo Children in HH_2 Curre	-1.25E-7	-6.43E-9	9.66E-8	-9.67E-8	3.618E-8
pfpl0-99% FPL_2 Current Asthmati	1.168E-7	-8.5E-8	-1.25E-7	1.166E-7	-8.63E-8
INSYes_2 Current Asthmatic	-1.38E-7	-3.91E-8	7.462E-8	-9.38E-8	9.61E-8

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Estimated Covariance Matrix				
Parameter	raceMultiracial / Other_2 Curren	childhhNo Children in HH_2 Curre	pfpl0-99% FPL_2 Current Asthmati	INSYes_2 Current Asthmatic
Intercept_2 Current Asthmatic	1.171E-7	-3.48E-7	2.935E-7	-9.73E-7
SRSEXFemale_2 Current Asthmatic	6.019E-9	3.586E-8	-3.27E-8	-4.04E-8
lateradultYoung / Middle Aged_2	-4.83E-8	1.778E-7	-1.02E-8	1.319E-7
CITIZEN2Non-Citizen_2 Current As	1.52E-7	1.312E-7	-1.84E-7	2.471E-7
CITIZEN2US-Born Citizen_2 Curren	-2.9E-7	-1.25E-7	1.168E-7	-1.38E-7
raceAfrican American_2 Current A	-6.8E-7	-6.43E-9	-8.5E-8	-3.91E-8
raceAmerican Indian / Alaska Nat	-7.78E-6	9.66E-8	-1.25E-7	7.462E-8
raceAsian_2 Current Asthmatic	-6.92E-7	-9.67E-8	1.166E-7	-9.38E-8
raceLatino_2 Current Asthmatic	-1.93E-7	3.618E-8	-8.63E-8	9.61E-8
raceMultiracial / Other_2 Curren	9.287E-6	-1.7E-8	3.725E-8	1.595E-8
childhhNo Children in HH_2 Curre	-1.7E-8	5.816E-7	1.283E-8	7.551E-8
pfpl0-99% FPL_2 Current Asthmati	3.725E-8	1.283E-8	7.466E-7	5.936E-8
INSYes_2 Current Asthmatic	1.595E-8	7.551E-8	5.936E-8	1.256E-6



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Estimated Correlation Matrix				
Parameter	Intercept_2 Current Asthmatic	SRSEXFemale_2 Current Asthmatic	lateradultYoung / Middle Aged_2	CITIZEN2Non-Citizen_2 Current As
Intercept_2 Current Asthmatic	1.0000	-0.0903	-0.3850	0.1618
SRSEXFemale_2 Current Asthmatic	-0.0903	1.0000	0.0539	0.0152
lateradultYoung / Middle Aged_2	-0.3850	0.0539	1.0000	-0.0167
CITIZEN2Non-Citizen_2 Current As	0.1618	0.0152	-0.0167	1.0000
CITIZEN2US-Born Citizen_2 Curren	-0.3342	0.0008	-0.0639	-0.5068
raceAfrican American_2 Current A	-0.1814	-0.0072	0.0016	0.0333
raceAmerican Indian / Alaska Nat	0.5080	0.0053	0.0282	0.0211
raceAsian_2 Current Asthmatic	-0.3436	-0.0132	-0.0628	-0.0271
raceLatino_2 Current Asthmatic	-0.5870	-0.0005	-0.0532	-0.1533
raceMultiracial / Other_2 Curren	0.0188	0.0030	-0.0174	0.0291
childhhNo Children in HH_2 Curre	-0.2231	0.0709	0.2561	0.1003
pfpl0-99% FPL_2 Current Asthmati	0.1660	-0.0571	-0.0130	-0.1242
INSYes_2 Current Asthmatic	-0.4242	-0.0543	0.1293	0.1286

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Estimated Correlation Matrix					
Parameter	CITIZEN2US-Born Citizen_2 Curren	raceAfrican American_2 Current A	raceAmerican Indian / Alaska Nat	raceAsian_2 Current Asthmatic	raceLatino_2 Current Asthmatic
Intercept_2 Current Asthmatic	-0.3342	-0.1814	0.5080	-0.3436	-0.5870
SRSEXFemale_2 Current Asthmatic	0.0008	-0.0072	0.0053	-0.0132	-0.0005
lateradultYoung / Middle Aged_2	-0.0639	0.0016	0.0282	-0.0628	-0.0532
CITIZEN2Non-Citizen_2 Current As	-0.5068	0.0333	0.0211	-0.0271	-0.1533
CITIZEN2US-Born Citizen_2 Curren	1.0000	-0.1055	-0.0615	0.3039	0.2017
raceAfrican American_2 Current A	-0.1055	1.0000	-0.4962	0.0404	0.1815
raceAmerican Indian / Alaska Nat	-0.0615	-0.4962	1.0000	-0.5233	-0.6172
raceAsian_2 Current Asthmatic	0.3039	0.0404	-0.5233	1.0000	0.3052
raceLatino_2 Current Asthmatic	0.2017	0.1815	-0.6172	0.3052	1.0000
raceMultiracial / Other_2 Curren	-0.0761	-0.0949	-0.4374	-0.0991	-0.0358
childhhNo Children in HH_2 Curre	-0.1305	-0.0036	0.0217	-0.0553	0.0268
pfpl0-99% FPL_2 Current Asthmati	0.1080	-0.0418	-0.0248	0.0589	-0.0564
INSYes_2 Current Asthmatic	-0.0980	-0.0148	0.0114	-0.0365	0.0484

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Estimated Correlation Matrix				
Parameter	raceMultiracial / Other_2 Curren	childhhNo Children in HH_2 Curre	pfpl0-99% FPL_2 Current Asthmati	INSYes_2 Current Asthmatic
Intercept_2 Current Asthmatic	0.0188	-0.2231	0.1660	-0.4242
SRSEXFemale_2 Current Asthmatic	0.0030	0.0709	-0.0571	-0.0543
lateradultYoung / Middle Aged_2	-0.0174	0.2561	-0.0130	0.1293
CITIZEN2Non-Citizen_2 Current As	0.0291	0.1003	-0.1242	0.1286
CITIZEN2US-Born Citizen_2 Curren	-0.0761	-0.1305	0.1080	-0.0980
raceAfrican American_2 Current A	-0.0949	-0.0036	-0.0418	-0.0148
raceAmerican Indian / Alaska Nat	-0.4374	0.0217	-0.0248	0.0114
raceAsian_2 Current Asthmatic	-0.0991	-0.0553	0.0589	-0.0365
raceLatino_2 Current Asthmatic	-0.0358	0.0268	-0.0564	0.0484
raceMultiracial / Other_2 Curren	1.0000	-0.0073	0.0141	0.0047
childhhNo Children in HH_2 Curre	-0.0073	1.0000	0.0195	0.0883
pfpl0-99% FPL_2 Current Asthmati	0.0141	0.0195	1.0000	0.0613
INSYes_2 Current Asthmatic	0.0047	0.0883	0.0613	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

