

*FinalModeling*  
**CHIS MLE\_CURRENTASTHMA\_FLAT**  
**PROC SURVEYLOGISTIC - May 2, 2019**

**The SURVEYLOGISTIC Procedure**

Model Information		
Data Set	CHIS.CHIS_DATA_BINOMIAL_ED2	
Response Variable	asthmaesc	ED/UC Asthma Visit
Number of Response Levels	2	
Weight Variable	frwgt0	
Model	Generalized Logit	
Optimization Technique	Newton-Raphson	

Number of Observations Read	124521
Number of Observations Used	124521
Sum of Weights Read	28246634
Sum of Weights Used	28246634

Response Profile			
Ordered Value	asthmaesc	Total Frequency	Total Weight
1	1 Asthmatic Escalation	1095	237259
2	2 No Asthma Escalation	123426	28009375

*Logits modeled use asthmaesc='2 No Asthma Escalation' as the reference category.*

Variance Estimation	
Method	Jackknife
Replicate Weights	CHIS_DATA_BINOMIAL_ED2
Number of Replicates	160

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	2740515.8	2658569.4
SC	2740531.0	2658630.0
-2 Log L	2740513.8	2658561.4

R-Square	0.0029	Max-rescaled R-Square	0.0313
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Testing Global Null Hypothesis: BETA=0				
Test	F Value	Num DF	Den DF	Pr > F
Likelihood Ratio	94.50	2.7513	440.22	<.0001
Score	18.79	3	160	<.0001
Wald	22.74	3	160	<.0001
NOTE: Second-order Rao-Scott design correction 0.0904 applied to the Likelihood Ratio test.				

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
SRSEX	30.72	1	160	<.0001
race	0.48	1	160	0.4875
pfpl	32.09	1	160	<.0001

Analysis of Maximum Likelihood Estimates						
Parameter	asthmaesc	Estimate	Standard Error	t Value	Pr >  t	Standardized Estimate
Intercept	1 Asthmatic Escalation	-5.6012	0.3515	-15.94	<.0001	
SRSEX	1 Asthmatic Escalation	0.9682	0.1747	5.54	<.0001	4.0187
race	1 Asthmatic Escalation	0.0215	0.0309	0.70	0.4875	0.4192
pfpl	1 Asthmatic Escalation	-0.2058	0.0363	-5.67	<.0001	-2.5470
NOTE: The degrees of freedom for the t tests is 160.						

Odds Ratio Estimates				
Effect	asthmaesc	Point Estimate	95% Confidence Limits	
SRSEX	1 Asthmatic Escalation	2.633	1.865	3.718
race	1 Asthmatic Escalation	1.022	0.961	1.086
pfpl	1 Asthmatic Escalation	0.814	0.758	0.875
NOTE: The degrees of freedom in computing the confidence limits is 160.				

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	0.4	Somers' D	0.002
Percent Discordant	0.2	Gamma	0.380
Percent Tied	99.5	Tau-a	0.001
Pairs	20101233902	c	0.501

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**The SURVEYLOGISTIC Procedure**

Estimated Covariance Matrix				
Parameter	Intercept_1 Asthmatic Escalation	SRSEX_1 Asthmatic Escalation	race_1 Asthmatic Escalation	pfpl_1 Asthmatic Escalation
Intercept_1 Asthmatic Escalation	0.123539	-0.05492	-0.0039	-0.00183
SRSEX_1 Asthmatic Escalation	-0.05492	0.030512	0.000757	-0.00031
race_1 Asthmatic Escalation	-0.0039	0.000757	0.000953	-0.00052
pfpl_1 Asthmatic Escalation	-0.00183	-0.00031	-0.00052	0.001319

Estimated Correlation Matrix				
Parameter	Intercept_1 Asthmatic Escalation	SRSEX_1 Asthmatic Escalation	race_1 Asthmatic Escalation	pfpl_1 Asthmatic Escalation
Intercept_1 Asthmatic Escalation	1.0000	-0.8945	-0.3594	-0.1431
SRSEX_1 Asthmatic Escalation	-0.8945	1.0000	0.1403	-0.0485
race_1 Asthmatic Escalation	-0.3594	0.1403	1.0000	-0.4606
pfpl_1 Asthmatic Escalation	-0.1431	-0.0485	-0.4606	1.0000

Classification Table									
Prob Level	Correct		Incorrect		Percentages				
	Event	Non- Event	Event	Non- Event	Correct	Sensi- tivity	Speci- ficity	Pos Pred	Neg Pred
0.000	1095	0	123E3	0	0.9	100.0	0.0	0.9	.
0.020	15	112E3	11874	1080	89.6	1.4	90.4	0.1	99.0
0.040	1	123E3	642	1094	98.6	0.1	99.5	0.2	99.1
0.060	1	123E3	376	1094	98.8	0.1	99.7	0.3	99.1
0.080	1	123E3	267	1094	98.9	0.1	99.8	0.4	99.1
0.100	1	123E3	226	1094	98.9	0.1	99.8	0.4	99.1
0.120	1	123E3	201	1094	99.0	0.1	99.8	0.5	99.1
0.140	1	123E3	178	1094	99.0	0.1	99.9	0.6	99.1
0.160	1	123E3	163	1094	99.0	0.1	99.9	0.6	99.1
0.180	1	123E3	155	1094	99.0	0.1	99.9	0.6	99.1
0.200	1	123E3	147	1094	99.0	0.1	99.9	0.7	99.1
0.220	1	123E3	143	1094	99.0	0.1	99.9	0.7	99.1
0.240	1	123E3	129	1094	99.0	0.1	99.9	0.8	99.1
0.260	1	123E3	125	1094	99.0	0.1	99.9	0.8	99.1
0.280	1	123E3	121	1094	99.0	0.1	99.9	0.8	99.1
0.300	1	123E3	117	1094	99.0	0.1	99.9	0.8	99.1
0.320	1	123E3	116	1094	99.0	0.1	99.9	0.9	99.1
0.340	1	123E3	114	1094	99.0	0.1	99.9	0.9	99.1
0.360	1	123E3	110	1094	99.0	0.1	99.9	0.9	99.1

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**The SURVEYLOGISTIC Procedure**

Classification Table									
	Correct		Incorrect		Percentages				
Prob Level	Event	Non-Event	Event	Non-Event	Correct	Sensitivity	Specificity	Pos Pred	Neg Pred
0.380	1	123E3	108	1094	99.0	0.1	99.9	0.9	99.1
0.400	1	123E3	108	1094	99.0	0.1	99.9	0.9	99.1
0.420	1	123E3	103	1094	99.0	0.1	99.9	1.0	99.1
0.440	1	123E3	98	1094	99.0	0.1	99.9	1.0	99.1
0.460	1	123E3	93	1094	99.0	0.1	99.9	1.1	99.1
0.480	1	123E3	90	1094	99.0	0.1	99.9	1.1	99.1
0.500	1	123E3	90	1094	99.0	0.1	99.9	1.1	99.1
0.520	1	123E3	89	1094	99.0	0.1	99.9	1.1	99.1
0.540	1	123E3	89	1094	99.0	0.1	99.9	1.1	99.1
0.560	1	123E3	82	1094	99.1	0.1	99.9	1.2	99.1
0.580	1	123E3	80	1094	99.1	0.1	99.9	1.2	99.1
0.600	1	123E3	78	1094	99.1	0.1	99.9	1.3	99.1
0.620	1	123E3	74	1094	99.1	0.1	99.9	1.3	99.1
0.640	1	123E3	72	1094	99.1	0.1	99.9	1.4	99.1
0.660	1	123E3	71	1094	99.1	0.1	99.9	1.4	99.1
0.680	1	123E3	68	1094	99.1	0.1	99.9	1.4	99.1
0.700	1	123E3	66	1094	99.1	0.1	99.9	1.5	99.1
0.720	1	123E3	65	1094	99.1	0.1	99.9	1.5	99.1
0.740	1	123E3	63	1094	99.1	0.1	99.9	1.6	99.1
0.760	1	123E3	61	1094	99.1	0.1	100.0	1.6	99.1
0.780	1	123E3	60	1094	99.1	0.1	100.0	1.6	99.1
0.800	1	123E3	60	1094	99.1	0.1	100.0	1.6	99.1
0.820	1	123E3	58	1094	99.1	0.1	100.0	1.7	99.1
0.840	1	123E3	56	1094	99.1	0.1	100.0	1.8	99.1
0.860	1	123E3	54	1094	99.1	0.1	100.0	1.8	99.1
0.880	1	123E3	52	1094	99.1	0.1	100.0	1.9	99.1
0.900	1	123E3	50	1094	99.1	0.1	100.0	2.0	99.1
0.920	1	123E3	47	1094	99.1	0.1	100.0	2.1	99.1
0.940	1	123E3	42	1094	99.1	0.1	100.0	2.3	99.1
0.960	1	123E3	39	1094	99.1	0.1	100.0	2.5	99.1
0.980	1	123E3	36	1094	99.1	0.1	100.0	2.7	99.1
1.000	0	123E3	0	1095	99.1	0.0	100.0	.	99.1

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*The SURVEYLOGISTIC Procedure*

*Domain Analysis for domain analyzeData=1*

Model Information		
Data Set	CHIS.CHIS_DATA_BINOMIAL_ED2	
Response Variable	asthmaesc	ED/UC Asthma Visit
Number of Response Levels	2	
Weight Variable	fnwgt0	
Model	Generalized Logit	
Optimization Technique	Newton-Raphson	

Number of Observations Read	124521
Number of Observations Used	124521
Sum of Weights Read	2765889
Sum of Weights Used	2765889

Response Profile			
Ordered Value	asthmaesc	Total Frequency	Total Weight
1	1 Asthmatic Escalation	1095	237258.9
2	2 No Asthma Escalation	12495	2528630.5

*Logits modeled use asthmaesc='2 No Asthma Escalation' as the reference category.*

Domain Summary	
Number of Observations	124521
Number of Observations in Domain	13590
Number of Observations not in Domain	110931
Sum of Weights in Domain	2765889.4

Variance Estimation	
Method	Jackknife
Replicate Weights	CHIS_DATA_BINOMIAL_ED2
Number of Replicates	160

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

## The SURVEYLOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	1618958.7	1572956.1
SC	1618971.5	1573007.5
-2 Log L	1618956.7	1572948.1

Testing Global Null Hypothesis: BETA=0				
Test	F Value	Num DF	Den DF	Pr > F
Likelihood Ratio	62.07	2.7416	438.66	<.0001
Score	12.59	3	160	<.0001
Wald	17.06	3	160	<.0001
<p><b>NOTE:</b>            Second-order Rao-Scott design correction 0.0943            applied to the Likelihood Ratio test.</p>				

Analysis of Maximum Likelihood Estimates						
Parameter	asthmaesc	Estimate	Standard Error	t Value	Pr >  t	Standardized Estimate
Intercept	1 Asthmatic Escalation	-2.3141	0.3690	-6.27	<.0001	
SRSEX	1 Asthmatic Escalation	0.5549	0.1785	3.11	0.0022	0.6987
race	1 Asthmatic Escalation	-0.0806	0.0285	-2.83	0.0053	-0.4857
pfpl	1 Asthmatic Escalation	-0.1604	0.0350	-4.58	<.0001	-0.6550
NOTE: The degrees of freedom for the t tests is 160.						

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**Domain Analysis for domain analyzeData=1**

Odds Ratio Estimates				
Effect	asthmaesc	Point Estimate	95% Confidence Limits	
SRSEX	1 Asthmatic Escalation	1.742	1.224	2.478
race	1 Asthmatic Escalation	0.923	0.872	0.976
pfpl	1 Asthmatic Escalation	0.852	0.795	0.913
<b>NOTE:</b> The degrees of freedom in computing the confidence limits is 160.				

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	53.5	Somers' D	0.222
Percent Discordant	31.3	Gamma	0.261
Percent Tied	15.2	Tau-a	0.033
Pairs	13682025	c	0.611

Estimated Covariance Matrix				
Parameter	Intercept_1 Asthmatic Escalation	SRSEX_1 Asthmatic Escalation	race_1 Asthmatic Escalation	pfpl_1 Asthmatic Escalation
Intercept_1 Asthmatic Escalation	0.136144	-0.058	-0.00443	-0.00303
SRSEX_1 Asthmatic Escalation	-0.058	0.03185	0.000792	-0.00014
race_1 Asthmatic Escalation	-0.00443	0.000792	0.000812	-0.00024
pfpl_1 Asthmatic Escalation	-0.00303	-0.00014	-0.00024	0.001225

Estimated Correlation Matrix				
Parameter	Intercept_1 Asthmatic Escalation	SRSEX_1 Asthmatic Escalation	race_1 Asthmatic Escalation	pfpl_1 Asthmatic Escalation
Intercept_1 Asthmatic Escalation	1.0000	-0.8809	-0.4214	-0.2343
SRSEX_1 Asthmatic Escalation	-0.8809	1.0000	0.1558	-0.0218
race_1 Asthmatic Escalation	-0.4214	0.1558	1.0000	-0.2448
pfpl_1 Asthmatic Escalation	-0.2343	-0.0218	-0.2448	1.0000

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**Domain Analysis for domain analyzeData=1**

Classification Table									
Prob Level	Correct		Incorrect		Percentages				
	Event	Non-Event	Event	Non-Event	Correct	Sensitivity	Specificity	Pos Pred	Neg Pred
0.000	1095	0	123E3	0	0.9	100.0	0.0	0.9	.
0.020	679	741	123E3	416	1.1	62.0	0.6	0.6	64.0
0.040	520	1967	121E3	575	2.0	47.5	1.6	0.4	77.4
0.060	360	36785	86641	735	29.8	32.9	29.8	0.4	98.0
0.080	227	84248	39178	868	67.8	20.7	68.3	0.6	99.0
0.100	182	97492	25934	913	78.4	16.6	79.0	0.7	99.1
0.120	156	111E3	12782	939	89.0	14.2	89.6	1.2	99.2
0.140	125	114E3	9277	970	91.8	11.4	92.5	1.3	99.2
0.160	115	117E3	6815	980	93.7	10.5	94.5	1.7	99.2
0.180	108	117E3	6369	987	94.1	9.9	94.8	1.7	99.2
0.200	105	122E3	1371	990	98.1	9.6	98.9	7.1	99.2
0.220	105	122E3	1196	990	98.2	9.6	99.0	8.1	99.2
0.240	105	122E3	1070	990	98.3	9.6	99.1	8.9	99.2
0.260	105	122E3	976	990	98.4	9.6	99.2	9.7	99.2
0.280	105	123E3	898	990	98.5	9.6	99.3	10.5	99.2
0.300	105	123E3	836	990	98.5	9.6	99.3	11.2	99.2
0.320	105	123E3	768	990	98.6	9.6	99.4	12.0	99.2
0.340	105	123E3	722	990	98.6	9.6	99.4	12.7	99.2
0.360	105	123E3	698	990	98.6	9.6	99.4	13.1	99.2
0.380	105	123E3	666	990	98.7	9.6	99.5	13.6	99.2
0.400	105	123E3	635	990	98.7	9.6	99.5	14.2	99.2
0.420	105	123E3	614	990	98.7	9.6	99.5	14.6	99.2
0.440	105	123E3	591	990	98.7	9.6	99.5	15.1	99.2
0.460	105	123E3	573	990	98.7	9.6	99.5	15.5	99.2
0.480	105	123E3	554	990	98.8	9.6	99.6	15.9	99.2
0.500	105	123E3	538	990	98.8	9.6	99.6	16.3	99.2
0.520	105	123E3	519	990	98.8	9.6	99.6	16.8	99.2
0.540	105	123E3	503	990	98.8	9.6	99.6	17.3	99.2
0.560	105	123E3	489	990	98.8	9.6	99.6	17.7	99.2
0.580	105	123E3	466	990	98.8	9.6	99.6	18.4	99.2
0.600	105	123E3	451	990	98.8	9.6	99.6	18.9	99.2
0.620	105	123E3	438	990	98.9	9.6	99.6	19.3	99.2
0.640	105	123E3	427	990	98.9	9.6	99.7	19.7	99.2
0.660	105	123E3	413	990	98.9	9.6	99.7	20.3	99.2



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**The SURVEYLOGISTIC Procedure**

**Domain Analysis for domain analyzeData=1**

Classification Table									
Prob Level	Correct		Incorrect		Percentages				
	Event	Non- Event	Event	Non- Event	Correct	Sensi- tivity	Speci- ficity	Pos Pred	Neg Pred
0.680	105	123E3	398	990	98.9	9.6	99.7	20.9	99.2
0.700	105	123E3	387	990	98.9	9.6	99.7	21.3	99.2
0.720	105	123E3	374	990	98.9	9.6	99.7	21.9	99.2
0.740	105	123E3	369	990	98.9	9.6	99.7	22.2	99.2
0.760	105	123E3	363	990	98.9	9.6	99.7	22.4	99.2
0.780	105	123E3	352	990	98.9	9.6	99.7	23.0	99.2
0.800	105	123E3	339	990	98.9	9.6	99.7	23.6	99.2
0.820	105	123E3	329	990	98.9	9.6	99.7	24.2	99.2
0.840	105	123E3	315	990	99.0	9.6	99.7	25.0	99.2
0.860	105	123E3	304	990	99.0	9.6	99.8	25.7	99.2
0.880	105	123E3	291	990	99.0	9.6	99.8	26.5	99.2
0.900	105	123E3	275	990	99.0	9.6	99.8	27.6	99.2
0.920	105	123E3	260	990	99.0	9.6	99.8	28.8	99.2
0.940	105	123E3	247	990	99.0	9.6	99.8	29.8	99.2
0.960	105	123E3	227	990	99.0	9.6	99.8	31.6	99.2
0.980	105	123E3	194	990	99.0	9.6	99.8	35.1	99.2
1.000	0	123E3	0	1095	99.1	0.0	100.0	.	99.1