*FinalModeling*
*CHIS   MLE_ASTHMAESCALATION*
*PROC SURVEYLOGISTIC - May 2, 2019*

*The SURVEYLOGISTIC Procedure*

| Model Information | | |
|---|---|---|
| Data Set | CHIS.CHIS_DATA_BINOMIAL_C | |
| Response Variable | nonasthmatic | Non-Asthmatic |
| 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 | 28246634 |
| Sum of Weights Used | 28246634 |

| Response Profile | | | |
|---|---|---|---|
| Ordered Value | nonasthmatic | Total Frequency | Total Weight |
| 1 | 1 Non-Asthmatic | 110931 | 25480744 |
| 2 | 2 Current Asthmatic | 13590 | 2765889 |

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

| Variance Estimation | |
|---|---|
| Method | Jackknife |
| Replicate Weights | CHIS_DATA_BINOMIAL_C |
| Number of Replicates | 160 |

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

| Model Fit Statistics | | |
|---|---|---|
| Criterion | Intercept Only | Intercept and Covariates |
| AIC | 18105355 | 17539060 |
| SC | 18105370 | 17539151 |
| -2 Log L | 18105353 | 17539048 |

| | | | |
|---|---|---|---|
| R-Square | 0.0198 | Max-rescaled R-Square | 0.0419 |

*FinalModeling*
*CHIS    MLE_ASTHMAESCALATION*
*PROC SURVEYLOGISTIC - May 2, 2019*

*The SURVEYLOGISTIC Procedure*

| Testing Global Null Hypothesis: BETA=0 | | | | |
|---|---|---|---|---|
| Test | F Value | Num DF | Den DF | Pr > F |
| Likelihood Ratio | 395.63 | 4.5402 | 726.44 | <.0001 |
| Score | 111.03 | 5 | 160 | <.0001 |
| Wald | 85.61 | 5 | 160 | <.0001 |
| NOTE: Second-order Rao-Scott design correction 0.1013 applied to the Likelihood Ratio test. | | | | |

| Type 3 Analysis of Effects | | | | |
|---|---|---|---|---|
| Effect | F Value | Num DF | Den DF | Pr > F |
| SRSEX | 96.07 | 1 | 160 | <.0001 |
| CITIZEN2 | 175.67 | 1 | 160 | <.0001 |
| race | 12.52 | 1 | 160 | 0.0005 |
| pfpl | 53.88 | 1 | 160 | <.0001 |
| INS | 19.68 | 1 | 160 | <.0001 |

| Analysis of Maximum Likelihood Estimates | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | nonasthmatic | Estimate | Standard Error | t Value | Pr > \|t\| | Standardized Estimate |
| Intercept | 2 Current Asthmatic | -1.5875 | 0.1547 | -10.26 | <.0001 | |
| SRSEX | 2 Current Asthmatic | 0.4781 | 0.0488 | 9.80 | <.0001 | 1.9843 |
| CITIZEN2 | 2 Current Asthmatic | -0.5376 | 0.0406 | -13.25 | <.0001 | -3.3835 |
| race | 2 Current Asthmatic | 0.0346 | 0.00979 | 3.54 | 0.0005 | 0.6758 |
| pfpl | 2 Current Asthmatic | -0.1055 | 0.0144 | -7.34 | <.0001 | -1.3060 |
| INS | 2 Current Asthmatic | -0.2932 | 0.0661 | -4.44 | <.0001 | -0.8557 |
| NOTE: The degrees of freedom for the t tests is 160. | | | | | | |

| Odds Ratio Estimates | | | | |
|---|---|---|---|---|
| Effect | nonasthmatic | Point Estimate | 95% Confidence Limits | |
| SRSEX | 2 Current Asthmatic | 1.613 | 1.465 | 1.776 |
| CITIZEN2 | 2 Current Asthmatic | 0.584 | 0.539 | 0.633 |
| race | 2 Current Asthmatic | 1.035 | 1.015 | 1.055 |
| pfpl | 2 Current Asthmatic | 0.900 | 0.875 | 0.926 |
| INS | 2 Current Asthmatic | 0.746 | 0.655 | 0.850 |
| NOTE: The degrees of freedom in computing the confidence limits is 160. | | | | |

*FinalModeling*
*CHIS   MLE_ASTHMAESCALATION*
*PROC SURVEYLOGISTIC - May 2, 2019*

*The SURVEYLOGISTIC Procedure*

| Association of Predicted Probabilities and Observed Responses | | | |
|---|---|---|---|
| Percent Concordant | 38.5 | Somers' D | 0.156 |
| Percent Discordant | 22.9 | Gamma | 0.255 |
| Percent Tied | 38.6 | Tau-a | 0.040 |
| Pairs | 2118195681.5 | c | 0.578 |

| Estimated Covariance Matrix | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | Intercept_2 Current Asthmatic | SRSEX_2 Current Asthmatic | CITIZEN2_2 Current Asthmatic | race_2 Current Asthmatic | pfpl_2 Current Asthmatic | INS_2 Current Asthmatic |
| Intercept_2 Current Asthmatic | 0.023936 | -0.00459 | -0.00271 | -0.00025 | -0.00117 | -0.00557 |
| SRSEX_2 Current Asthmatic | -0.00459 | 0.002379 | 0.000236 | -0.00005 | 0.000123 | 0.000078 |
| CITIZEN2_2 Current Asthmatic | -0.00271 | 0.000236 | 0.001645 | 0.000086 | 0.000074 | -0.00037 |
| race_2 Current Asthmatic | -0.00025 | -0.00005 | 0.000086 | 0.000096 | -0.00005 | -0.00003 |
| pfpl_2 Current Asthmatic | -0.00117 | 0.000123 | 0.000074 | -0.00005 | 0.000207 | 0.000213 |
| INS_2 Current Asthmatic | -0.00557 | 0.000078 | -0.00037 | -0.00003 | 0.000213 | 0.004369 |

| Estimated Correlation Matrix | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | Intercept_2 Current Asthmatic | SRSEX_2 Current Asthmatic | CITIZEN2_2 Current Asthmatic | race_2 Current Asthmatic | pfpl_2 Current Asthmatic | INS_2 Current Asthmatic |
| Intercept_2 Current Asthmatic | 1.0000 | -0.6082 | -0.4318 | -0.1634 | -0.5240 | -0.5449 |
| SRSEX_2 Current Asthmatic | -0.6082 | 1.0000 | 0.1193 | -0.0955 | 0.1756 | 0.0243 |
| CITIZEN2_2 Current Asthmatic | -0.4318 | 0.1193 | 1.0000 | 0.2160 | 0.1275 | -0.1392 |
| race_2 Current Asthmatic | -0.1634 | -0.0955 | 0.2160 | 1.0000 | -0.3529 | -0.0526 |
| pfpl_2 Current Asthmatic | -0.5240 | 0.1756 | 0.1275 | -0.3529 | 1.0000 | 0.2240 |
| INS_2 Current Asthmatic | -0.5449 | 0.0243 | -0.1392 | -0.0526 | 0.2240 | 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 | 25 | 111E3 | 249 | 13565 | 88.9 | 0.2 | 99.8 | 9.1 | 89.1 |

*FinalModeling*
*CHIS   MLE_ASTHMAESCALATION*
*PROC SURVEYLOGISTIC - May 2, 2019*

*The SURVEYLOGISTIC Procedure*

*Domain Analysis for domain analyzeData=1*

| Model Information | | |
|---|---|---|
| Data Set | CHIS.CHIS_DATA_BINOMIAL_C | |
| Response Variable | nonasthmatic | Non-Asthmatic |
| 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 | 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.*

| Domain Summary | |
|---|---|
| Number of Observations | 124521 |
| Number of Observations in Domain | 119710 |
| Number of Observations not in Domain | 4811 |
| Sum of Weights in Domain | 26984609 |

| Variance Estimation | |
|---|---|
| Method | Jackknife |
| Replicate Weights | CHIS_DATA_BINOMIAL_C |
| Number of Replicates | 160 |

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

*FinalModeling*
*CHIS   MLE_ASTHMAESCALATION*
*PROC SURVEYLOGISTIC - May 2, 2019*

*The SURVEYLOGISTIC Procedure*

*Domain Analysis for domain analyzeData=1*

| Model Fit Statistics | | |
| --- | --- | --- |
| Criterion | Intercept Only | Intercept and Covariates |
| AIC | 17838929 | 17257360 |
| SC | 17838944 | 17257451 |
| -2 Log L | 17838927 | 17257348 |

| R-Square | 0.0213 | Max-rescaled R-Square | 0.0441 |
| --- | --- | --- | --- |

| Testing Global Null Hypothesis: BETA=0 | | | | |
| --- | --- | --- | --- | --- |
| Test | F Value | Num DF | Den DF | Pr > F |
| Likelihood Ratio | 406.87 | 4.5442 | 727.07 | <.0001 |
| Score | 114.18 | 5 | 160 | <.0001 |
| Wald | 86.22 | 5 | 160 | <.0001 |
| NOTE: Second-order Rao-Scott design correction 0.1003 applied to the Likelihood Ratio test. | | | | |

| Type 3 Analysis of Effects | | | |
| --- | --- | --- | --- |
| Effect | F Value | Num DF | Den DF | Pr > F |
| SRSEX | 88.93 | 1 | 160 | <.0001 |
| CITIZEN2 | 188.50 | 1 | 160 | <.0001 |
| race | 11.35 | 1 | 160 | 0.0009 |
| pfpl | 51.18 | 1 | 160 | <.0001 |
| INS | 20.13 | 1 | 160 | <.0001 |

| Analysis of Maximum Likelihood Estimates | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter | nonasthmatic | Estimate | Standard Error | t Value | Pr > \|t\| | Standardized Estimate |
| Intercept | 2 Current Asthmatic | -1.4716 | 0.1546 | -9.52 | <.0001 | |
| SRSEX | 2 Current Asthmatic | 0.4610 | 0.0489 | 9.43 | <.0001 | 1.8700 |
| CITIZEN2 | 2 Current Asthmatic | -0.5596 | 0.0408 | -13.73 | <.0001 | -3.4680 |
| race | 2 Current Asthmatic | 0.0332 | 0.00985 | 3.37 | 0.0009 | 0.6326 |
| pfpl | 2 Current Asthmatic | -0.1043 | 0.0146 | -7.15 | <.0001 | -1.2670 |
| INS | 2 Current Asthmatic | -0.2977 | 0.0663 | -4.49 | <.0001 | -0.8522 |
| NOTE: The degrees of freedom for the t tests is 160. | | | | | | |

*FinalModeling*
*CHIS   MLE_ASTHMAESCALATION*
*PROC SURVEYLOGISTIC - May 2, 2019*

*The SURVEYLOGISTIC Procedure*

*Domain Analysis for domain analyzeData=1*

| Odds Ratio Estimates | | | | |
|---|---|---|---|---|
| **Effect** | **nonasthmatic** | **Point Estimate** | **95% Confidence Limits** | |
| **SRSEX** | 2 Current Asthmatic | 1.586 | 1.440 | 1.746 |
| **CITIZEN2** | 2 Current Asthmatic | 0.571 | 0.527 | 0.619 |
| **race** | 2 Current Asthmatic | 1.034 | 1.014 | 1.054 |
| **pfpl** | 2 Current Asthmatic | 0.901 | 0.875 | 0.927 |
| **INS** | 2 Current Asthmatic | 0.743 | 0.651 | 0.847 |
| **NOTE:** The degrees of freedom in computing the confidence limits is 160. | | | | |

| Association of Predicted Probabilities and Observed Responses | | | |
|---|---|---|---|
| **Percent Concordant** | 54.3 | **Somers' D** | 0.222 |
| **Percent Discordant** | 32.0 | **Gamma** | 0.258 |
| **Percent Tied** | 13.7 | **Tau-a** | 0.045 |
| **Pairs** | 1442170800 | **c** | 0.611 |

| Estimated Covariance Matrix | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | **Intercept_2 Current Asthmatic** | **SRSEX_2 Current Asthmatic** | **CITIZEN2_2 Current Asthmatic** | **race_2 Current Asthmatic** | **pfpl_2 Current Asthmatic** | **INS_2 Current Asthmatic** |
| **Intercept_2 Current Asthmatic** | 0.02389 | -0.0046 | -0.0027 | -0.00025 | -0.00118 | -0.0055 |
| **SRSEX_2 Current Asthmatic** | -0.0046 | 0.00239 | 0.000241 | -0.00004 | 0.000124 | 0.000049 |
| **CITIZEN2_2 Current Asthmatic** | -0.0027 | 0.000241 | 0.001661 | 0.000087 | 0.000078 | -0.00041 |
| **race_2 Current Asthmatic** | -0.00025 | -0.00004 | 0.000087 | 0.000097 | -0.00005 | -0.00004 |
| **pfpl_2 Current Asthmatic** | -0.00118 | 0.000124 | 0.000078 | -0.00005 | 0.000212 | 0.000207 |
| **INS_2 Current Asthmatic** | -0.0055 | 0.000049 | -0.00041 | -0.00004 | 0.000207 | 0.004402 |

| Estimated Correlation Matrix | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | **Intercept_2 Current Asthmatic** | **SRSEX_2 Current Asthmatic** | **CITIZEN2_2 Current Asthmatic** | **race_2 Current Asthmatic** | **pfpl_2 Current Asthmatic** | **INS_2 Current Asthmatic** |
| **Intercept_2 Current Asthmatic** | 1.0000 | -0.6083 | -0.4285 | -0.1673 | -0.5233 | -0.5360 |
| **SRSEX_2 Current Asthmatic** | -0.6083 | 1.0000 | 0.1209 | -0.0845 | 0.1746 | 0.0152 |
| **CITIZEN2_2 Current Asthmatic** | -0.4285 | 0.1209 | 1.0000 | 0.2174 | 0.1309 | -0.1509 |
| **race_2 Current Asthmatic** | -0.1673 | -0.0845 | 0.2174 | 1.0000 | -0.3538 | -0.0563 |
| **pfpl_2 Current Asthmatic** | -0.5233 | 0.1746 | 0.1309 | -0.3538 | 1.0000 | 0.2139 |
| **INS_2 Current Asthmatic** | -0.5360 | 0.0152 | -0.1509 | -0.0563 | 0.2139 | 1.0000 |

*FinalModeling*
*CHIS   MLE_ASTHMAESCALATION*
*PROC SURVEYLOGISTIC - May 2, 2019*

*The SURVEYLOGISTIC Procedure*

*Domain Analysis for domain analyzeData=1*

| | Classification Table | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Correct | | Incorrect | | Percentages | | | | |
| Prob Level | Event | Non-Event | Event | Non-Event | Correct | Sensi-tivity | Speci-ficity | Pos Pred | Neg Pred |
| 0.852 | 27 | 111E3 | 278 | 13563 | 88.9 | 0.2 | 99.7 | 8.9 | 89.1 |