The SURVEYFREQ Procedure

Data Summary	
Number of Observations	1447
Sum of Weights	4363

Table of hosp by hosp_num						
hosp	hosp_num	Frequency	Weighted Frequency	Std Err of Wgt Freq	Percent	Std Err of Percent
No	0	735	2808	75.19838	64.3594	1.3469
	1	0	.	.	.	.
	Total	735	2808	75.19838	64.3594	1.3469
Yes	0	0	.	.	.	.
	1	712	1555	57.08056	35.6406	1.3469
	Total	712	1555	57.08056	35.6406	1.3469
Total	0	735	2808	75.19838	64.3594	1.3469
	1	712	1555	57.08056	35.6406	1.3469
	Total	1447	4363	53.60645	100.0000	

Table of co					
co	Frequency	Weighted Frequency	Std Err of Wgt Freq	Percent	Std Err of Percent
Community-onset	846	2907	72.90100	66.6285	1.3382
Healthcare-associated	601	1456	58.42348	33.3715	1.3382
Total	1447	4363	53.60645	100.0000	

The FREQ Procedure

hosp	hosp_num	Frequency	Percent	Cumulative Frequency	Cumulative Percent
No	**0**	2808	64.36	2808	64.36
Yes	**1**	1555	35.64	4363	100.00

co	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Community-onset	2907	66.63	2907	66.63
Healthcare-associated	1456	33.37	4363	100.00

The FREQ Procedure

co	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Community-onset	2907	100.00	2907	100.00

The FREQ Procedure

co	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Healthcare-associated	1456	100.00	1456	100.00

SAS Modeling Output
Baseline Weighted Logistic Regression Model

The SURVEYLOGISTIC Procedure

Model Information	
Data Set	WORK.STAPH
Response Variable	hosp
Number of Response Levels	2
Stratum Variable	INVASIVE
Number of Strata	2
Weight Variable	WEIGHT
Model	Binary Logit
Optimization Technique	Newton-Raphson
Variance Adjustment	Degrees of Freedom (DF)

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	1447
Number of Observations Used	1447
Sum of Weights Read	4363
Sum of Weights Used	4363

Response Profile			
Ordered Value	**hosp**	**Total Frequency**	**Total Weight**
1	No	735	2808.0000
2	Yes	712	1555.0000

Probability modeled is hosp='Yes'.

Class Level Information		
Class	**Value**	**Design Variables**
WOUND	**No**	0
	Yes	1
mrsafinal	**MRSA**	1
	MSSA	0
kidney	**No**	0
	Yes	1
DIABETES	**No**	0
	Yes	1

SAS Modeling Output
Baseline Weighted Logistic Regression Model

The SURVEYLOGISTIC Procedure

Class Level Information		
Class	**Value**	**Design Variables**
SMOKER	**No**	0
	Yes	1
BSI	**No**	0
	Yes	1

Stratum Information		
Stratum Index	**INVASIVE**	**N Obs**
1	No	953
2	Yes	494

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	5685.439	4134.144
SC	5691.820	4185.191
-2 Log L	5683.439	4118.144

R-Square	0.3015	**Max-rescaled R-Square**	0.4140

Testing Global Null Hypothesis: BETA=0				
Test	**F Value**	**Num DF**	**Den DF**	**Pr > F**
Likelihood Ratio	74.16	7.0000	10115	<.0001
Score	121.72	7	1439	<.0001
Wald	39.21	7	1439	<.0001
NOTE: Second-order Rao-Scott design correction 0.0000 applied to the Likelihood Ratio test.				

SAS Modeling Output
Baseline Weighted Logistic Regression Model

The SURVEYLOGISTIC Procedure

Type 3 Analysis of Effects				
Effect	**F Value**	**Num DF**	**Den DF**	**Pr > F**
SMOKER	22.54	1	1445	<.0001
mrsafinal	22.41	1	1445	<.0001
kidney	13.38	1	1445	0.0003
DIABETES	35.62	1	1445	<.0001
BSI	158.48	1	1445	<.0001
WOUND	15.02	1	1445	0.0001
newage	9.69	1	1445	0.0019

Analysis of Maximum Likelihood Estimates					
Parameter		**Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept		-2.3264	0.1864	-12.48	<.0001
SMOKER	**Yes**	1.0095	0.2126	4.75	<.0001
mrsafinal	**MRSA**	0.7667	0.1620	4.73	<.0001
kidney	**Yes**	1.0379	0.2838	3.66	0.0003
DIABETES	**Yes**	1.1657	0.1953	5.97	<.0001
BSI	**Yes**	3.6303	0.2884	12.59	<.0001
WOUND	**Yes**	0.6579	0.1697	3.88	0.0001
newage		0.0108	0.00346	3.11	0.0019
NOTE: The degrees of freedom for the t tests is 1445.					

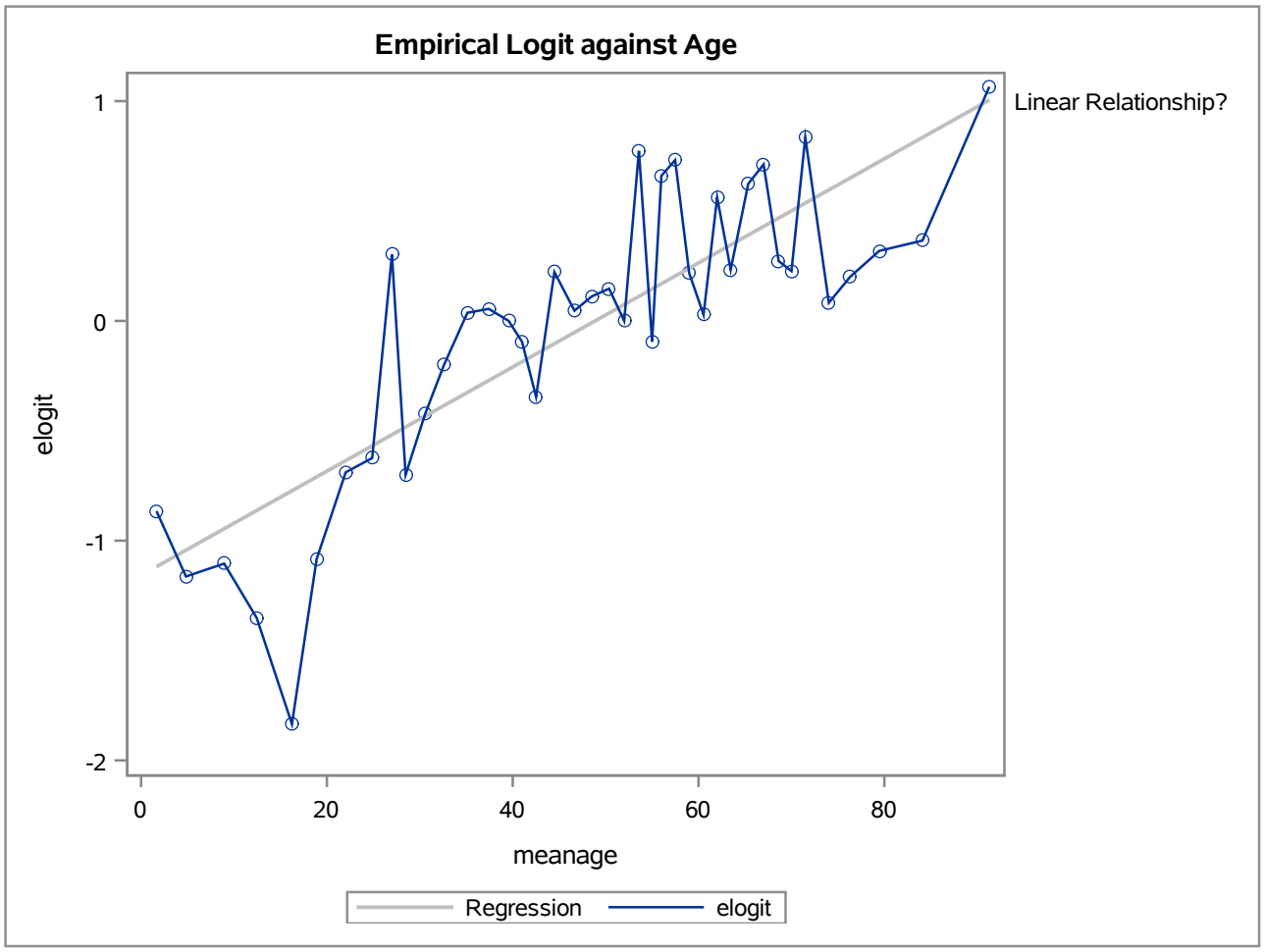
Odds Ratio Estimates			
Effect	**Point Estimate**	**95% Confidence Limits**	
SMOKER Yes vs No	2.744	1.808	4.164
mrsafinal MRSA vs MSSA	2.153	1.567	2.958
kidney Yes vs No	2.823	1.618	4.926
DIABETES Yes vs No	3.208	2.187	4.706
BSI Yes vs No	37.725	21.427	66.420
WOUND Yes vs No	1.931	1.384	2.694
newage	1.011	1.004	1.018
NOTE: The degrees of freedom in computing the confidence limits is 1445.			

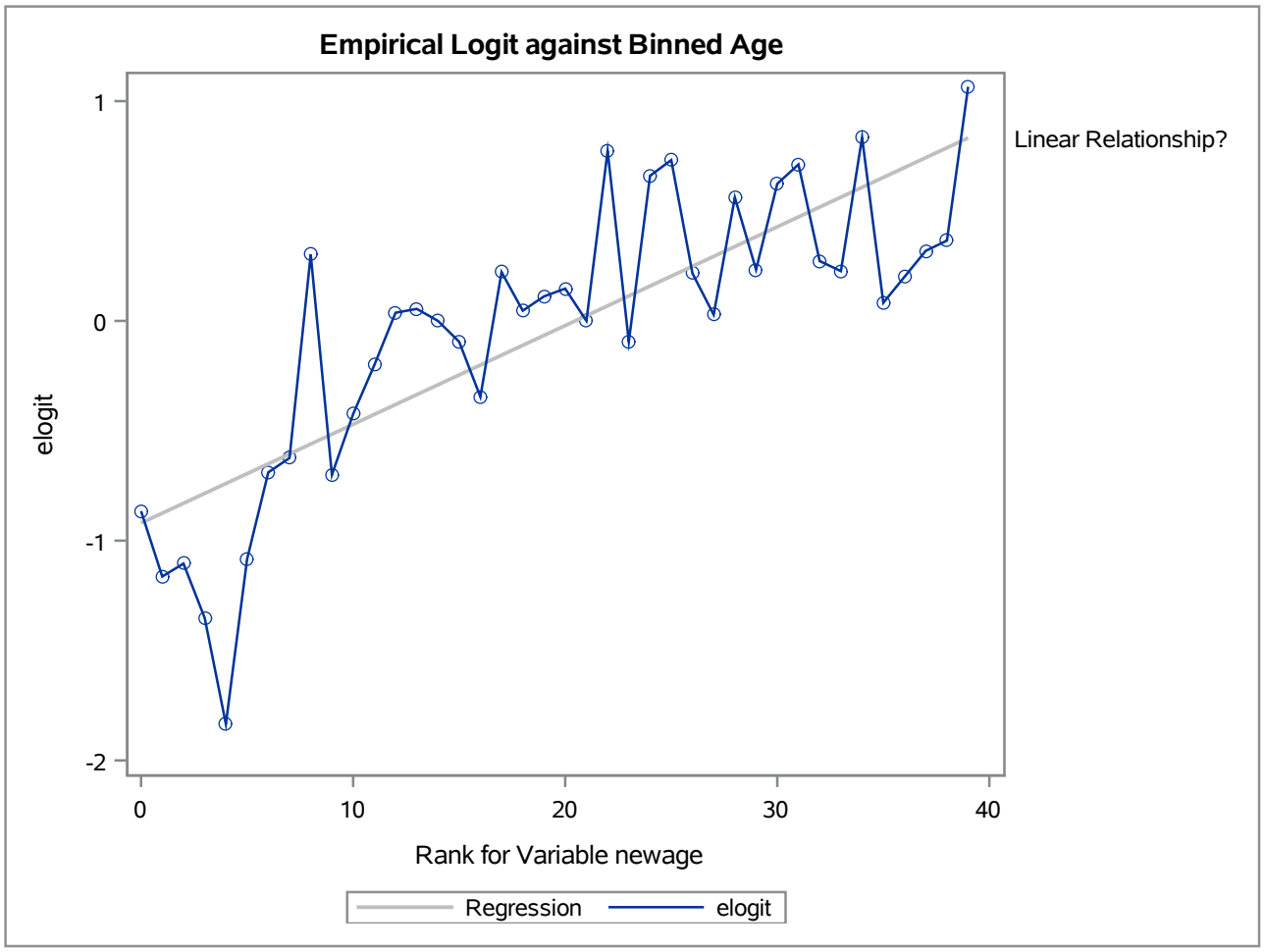
SAS Modeling Output
Baseline Weighted Logistic Regression Model

The SURVEYLOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.4	**Somers' D**	0.731
Percent Discordant	13.4	**Gamma**	0.732
Percent Tied	0.2	**Tau-a**	0.366
Pairs	523320	**c**	0.865

Estimated Correlation Matrix								
Parameter	**Intercept**	**SMOKERYes**	**mrsafinalMRSA**	**kidneyYes**	**DIABETESYes**	**BSIYes**	**WOUNDYes**	**newage**
Intercept	1.0000	-0.1785	-0.3593	0.0276	0.0005	-0.1332	-0.1622	-0.7818
SMOKERYes	-0.1785	1.0000	-0.0766	0.0801	0.0184	0.0226	-0.0322	0.0285
mrsafinalMRSA	-0.3593	-0.0766	1.0000	-0.0583	-0.0496	0.0480	0.0557	0.1120
kidneyYes	0.0276	0.0801	-0.0583	1.0000	-0.1249	-0.0402	0.0667	-0.1625
DIABETESYes	0.0005	0.0184	-0.0496	-0.1249	1.0000	0.1465	-0.0995	-0.1909
BSIYes	-0.1332	0.0226	0.0480	-0.0402	0.1465	1.0000	0.1665	-0.0821
WOUNDYes	-0.1622	-0.0322	0.0557	0.0667	-0.0995	0.1665	1.0000	-0.1344
newage	-0.7818	0.0285	0.1120	-0.1625	-0.1909	-0.0821	-0.1344	1.0000


Empirical Logit against Age
Linear Relationship?
elogit
1
0
-1
-2
0
20
40
60
80
meanage
Regression
elogit


Empirical Logit against Binned Age
Linear Relationship?
elogit
1
0
-1
-2
0
10
20
30
40
Rank for Variable newage
Regression
elogit

The CORR Procedure

2 Variables:	elogit meanage

Simple Statistics						
Variable	**N**	**Mean**	**Std Dev**	**Sum**	**Minimum**	**Maximum**
elogit	40	-0.04369	0.65292	-1.74763	-1.83438	1.06538
meanage	40	47.02262	22.85461	1881	1.65789	91.29730

Pearson Correlation Coefficients, N = 40 Prob > |r| under H0: Rho=0		
	elogit	**meanage**
elogit	1.00000	0.82924 <.0001
meanage	0.82924 <.0001	1.00000

The REG Procedure
Model: MODEL1
Dependent Variable: elogit

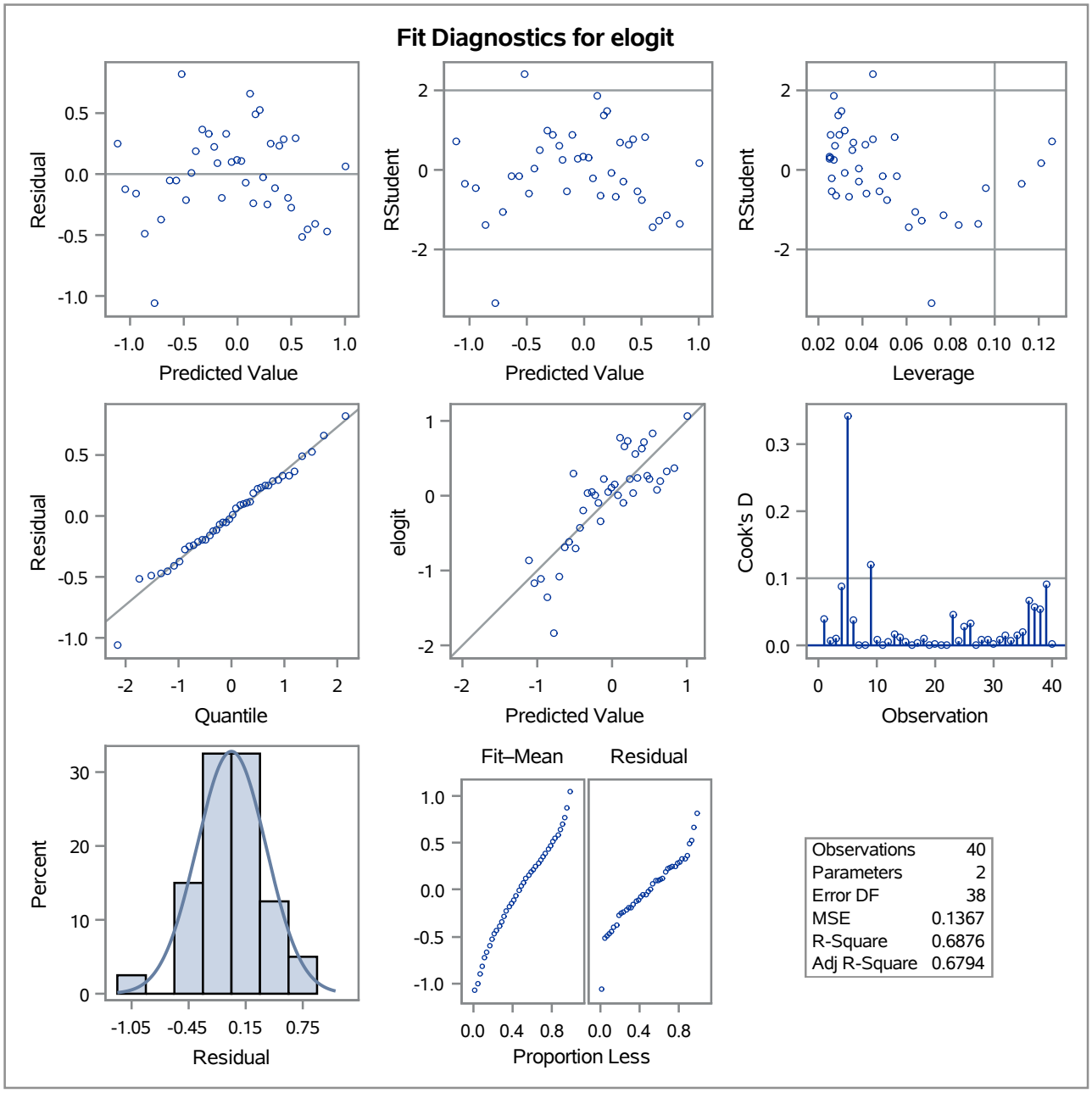
Number of Observations Read	40
Number of Observations Used	40

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	11.43252	11.43252	83.66	<.0001
Error	38	5.19311	0.13666		
Corrected Total	39	16.62563			

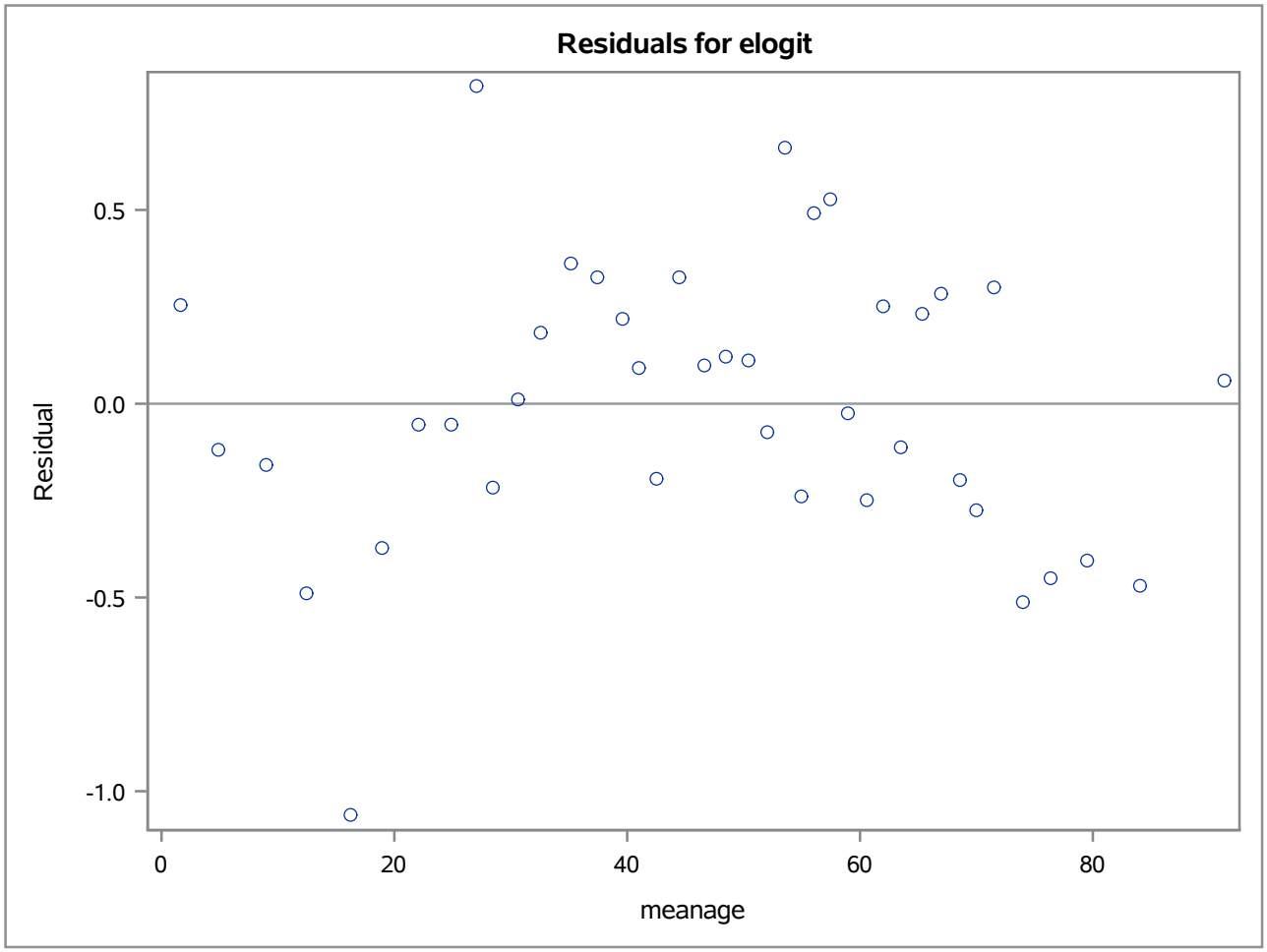
Root MSE	0.36968	R-Square	0.6876
Dependent Mean	-0.04369	Adj R-Sq	0.6794
Coeff Var	-846.12217		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-1.15766	0.13509	-8.57	<.0001
meanage	1	0.02369	0.00259	9.15	<.0001

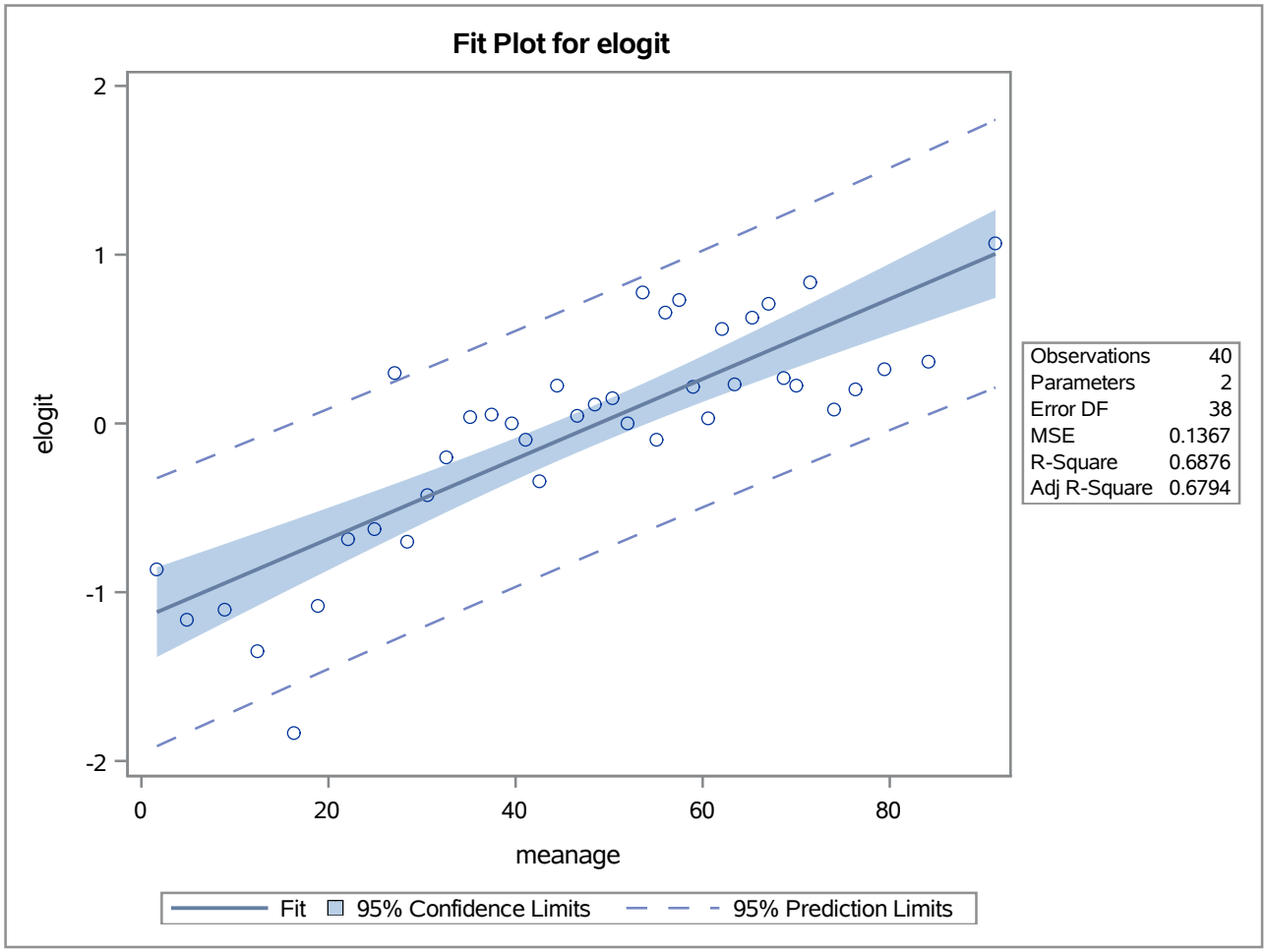
The REG Procedure
Model: MODEL1
Dependent Variable: elogit



The REG Procedure
Model: MODEL1
Dependent Variable: elogit



The REG Procedure
Model: MODEL1
Dependent Variable: elogit



Linear Association between logit and age

The CORR Procedure

2 Variables:	elogit bin

Simple Statistics							
Variable	**N**	**Mean**	**Std Dev**	**Sum**	**Minimum**	**Maximum**	**Label**
elogit	40	-0.04369	0.65292	-1.74763	-1.83438	1.06538	
bin	40	19.50000	11.69045	780.00000	0	39.00000	Rank for Variable newage

Pearson Correlation Coefficients, N = 40 Prob > |r| under H0: Rho=0		
	elogit	**bin**
elogit	1.00000	0.80448 <.0001
bin **Rank for Variable newage**	0.80448 <.0001	1.00000

The REG Procedure
Model: MODEL1
Dependent Variable: elogit

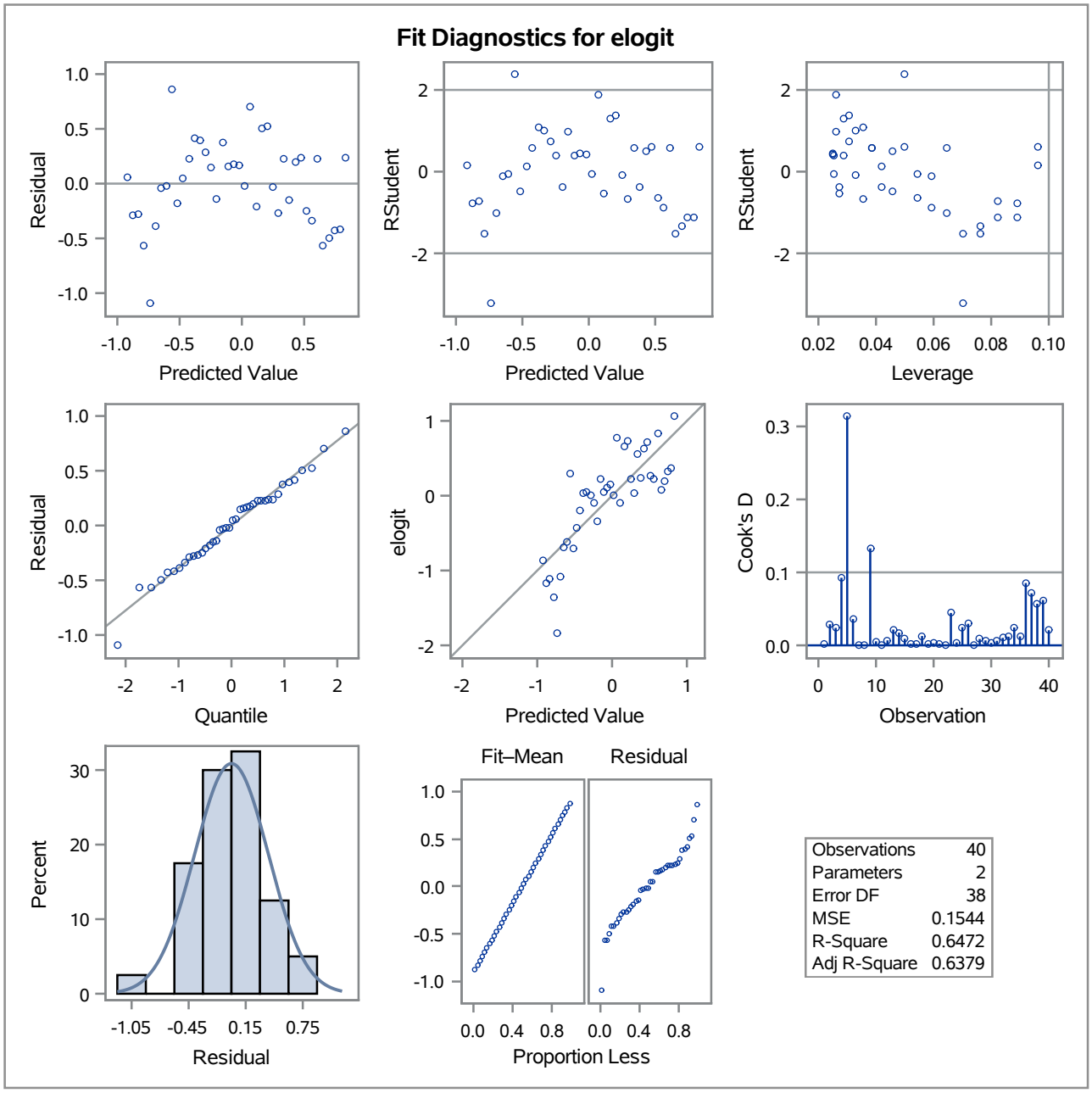
Number of Observations Read	40
Number of Observations Used	40

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	1	10.76003	10.76003	69.71	<.0001
Error	38	5.86560	0.15436		
Corrected Total	39	16.62563			

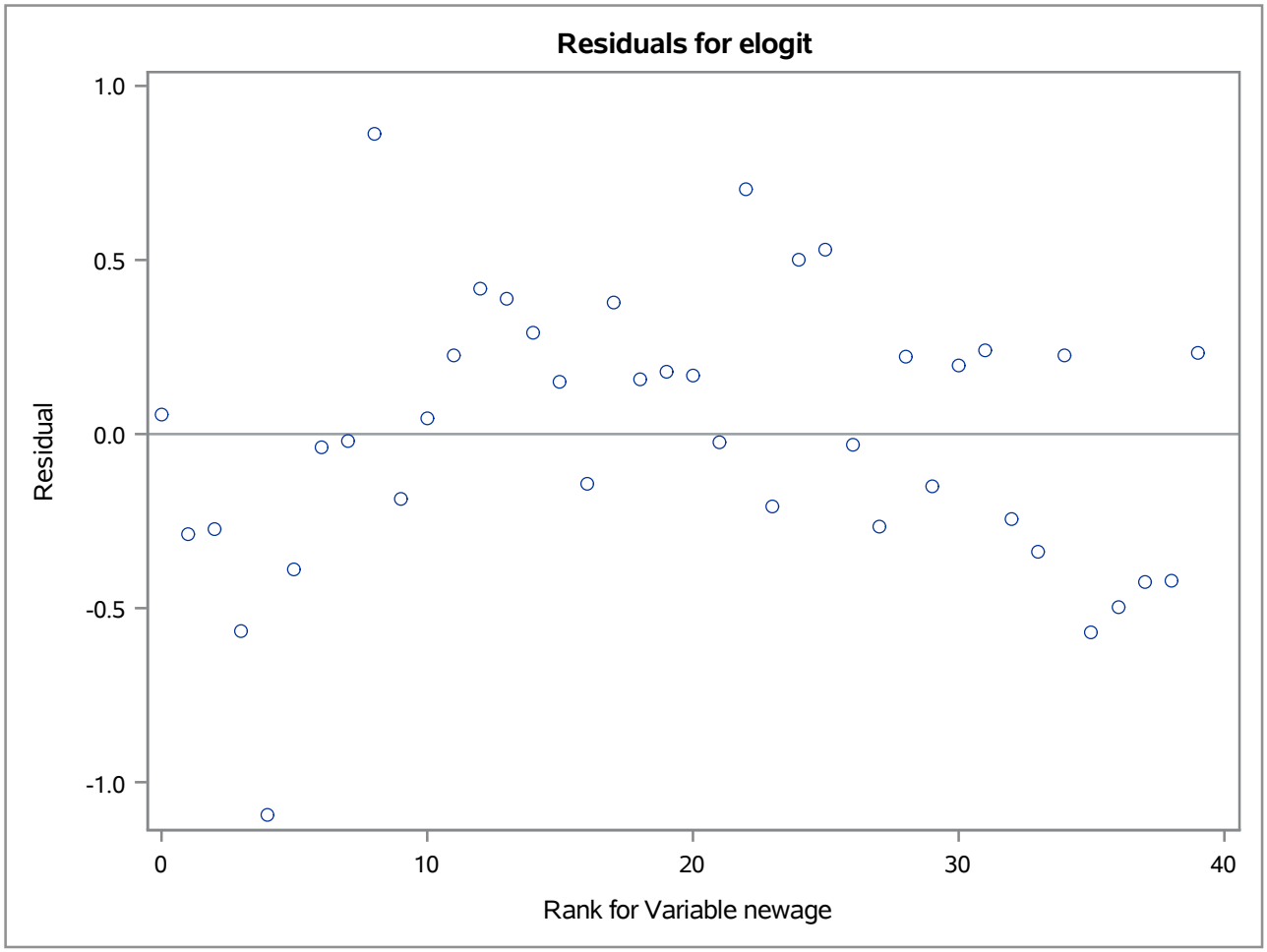
Root MSE	0.39288	**R-Square**	0.6472
Dependent Mean	-0.04369	**Adj R-Sq**	0.6379
Coeff Var	-899.23986		

Parameter Estimates						
Variable	**Label**	**DF**	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept	Intercept	1	-0.91984	0.12195	-7.54	<.0001
bin	Rank for Variable newage	1	0.04493	0.00538	8.35	<.0001

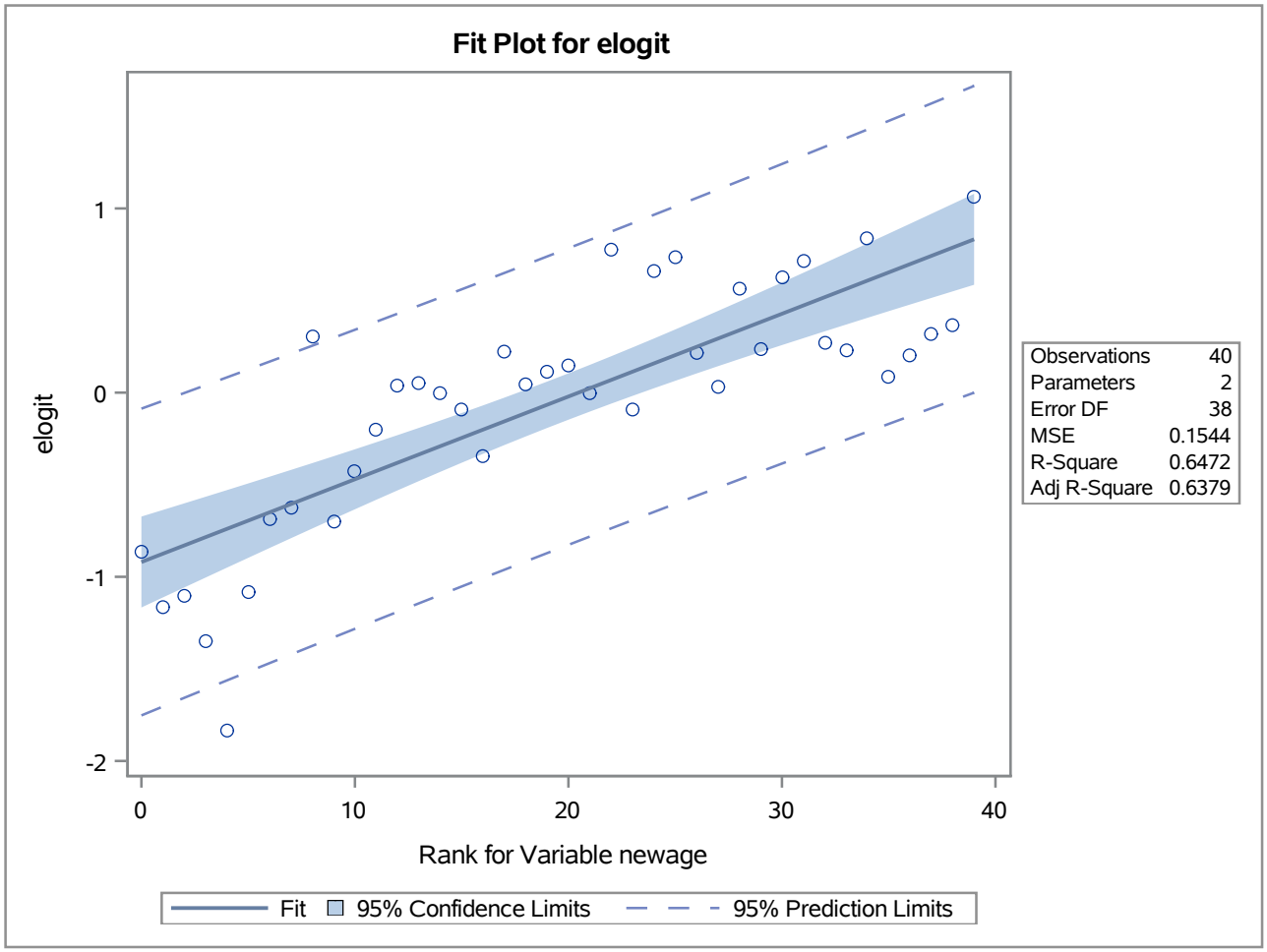
The REG Procedure
Model: MODEL1
Dependent Variable: elogit

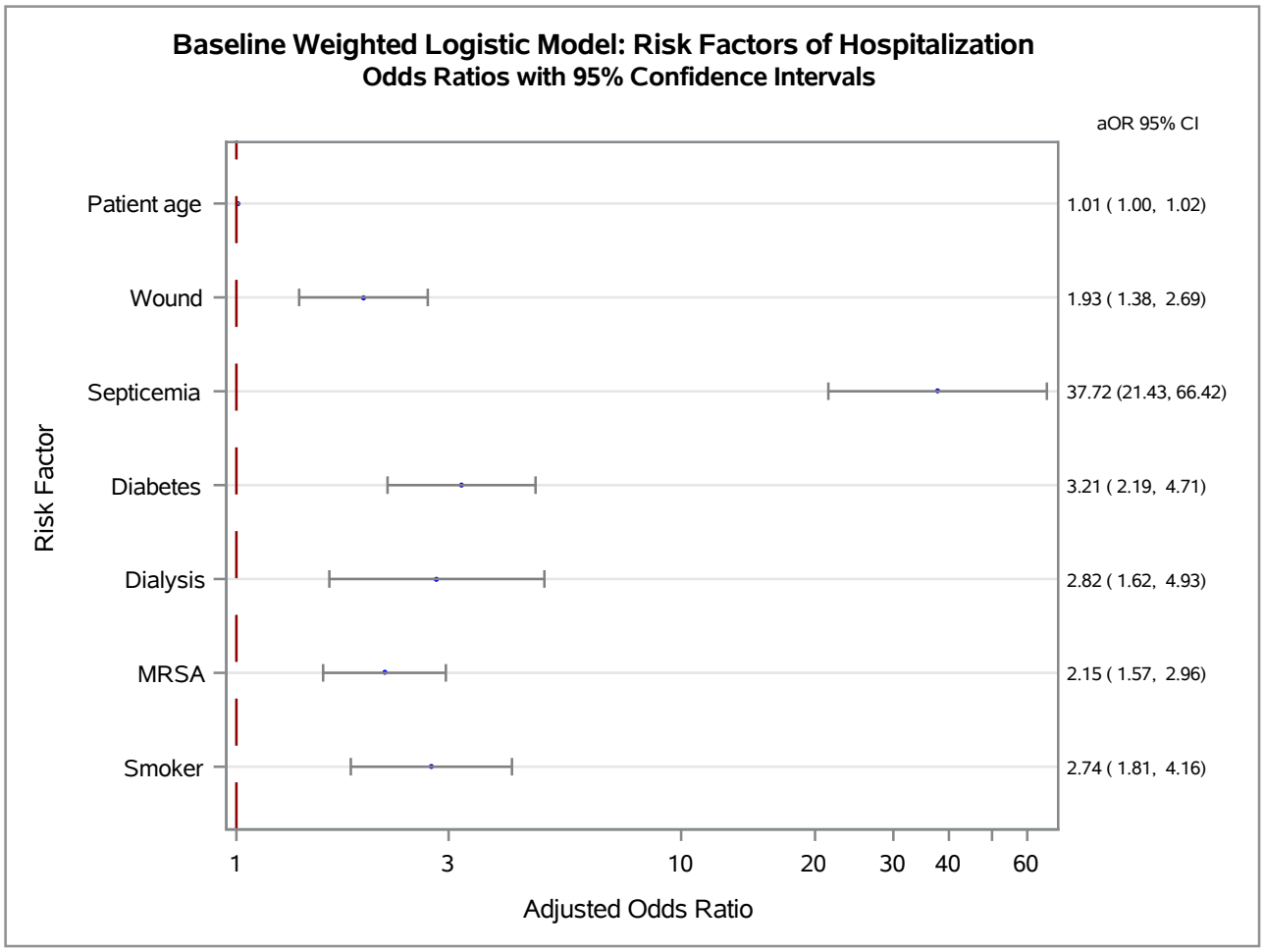


The REG Procedure
Model: MODEL1
Dependent Variable: elogit



The REG Procedure
Model: MODEL1
Dependent Variable: elogit




Baseline Weighted Logistic Model: Risk Factors of Hospitalization
Odds Ratios with 95% Confidence Intervals
aOR 95% CI
Patient age
Wound
Septicemia
Diabetes
Dialysis
MRSA
Smoker
1.01 (1.00, 1.02)
1.93 (1.38, 2.69)
37.72 (21.43, 66.42)
3.21 (2.19, 4.71)
2.82 (1.62, 4.93)
2.15 (1.57, 2.96)
2.74 (1.81, 4.16)
Risk Factor
1
3
10
20
30
40
60
Adjusted Odds Ratio

The SURVEYLOGISTIC Procedure

Model Information	
Data Set	WORK.COMM
Response Variable	hosp
Number of Response Levels	2
Stratum Variable	INVASIVE
Number of Strata	2
Weight Variable	WEIGHT
Model	Binary Logit
Optimization Technique	Newton-Raphson
Variance Adjustment	Degrees of Freedom (DF)

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	846
Number of Observations Used	846
Sum of Weights Read	2907
Sum of Weights Used	2907

Response Profile			
Ordered Value	**hosp**	**Total Frequency**	**Total Weight**
1	No	590	2285.0000
2	Yes	256	622.0000

Probability modeled is hosp='Yes'.

Class Level Information		
Class	**Value**	**Design Variables**
mrsafinal	**MRSA**	1
	MSSA	0
kidney	**No**	0
	Yes	1
DIABETES	**No**	0
	Yes	1
SMOKER	**No**	0
	Yes	1

The SURVEYLOGISTIC Procedure

Class Level Information		
Class	**Value**	**Design Variables**
BSI	**No**	0
	Yes	1
WOUND	**No**	0
	Yes	1

Stratum Information		
Stratum Index	**INVASIVE**	**N Obs**
1	No	679
2	Yes	167

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	3020.422	2305.551
SC	3026.397	2353.350
-2 Log L	3018.422	2289.551

R-Square	0.2218	**Max-rescaled R-Square**	0.3433

Testing Global Null Hypothesis: BETA=0				
Test	**F Value**	**Num DF**	**Den DF**	**Pr > F**
Likelihood Ratio	30.28	7.0000	5907.98	<.0001
Score	36.84	7	838	<.0001
Wald	24.99	7	838	<.0001
NOTE: Second-order Rao-Scott design correction 0.0000 applied to the Likelihood Ratio test.				

The SURVEYLOGISTIC Procedure

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
SMOKER	20.63	1	844	<.0001
mrsafinal	9.00	1	844	0.0028
kidney	2.37	1	844	0.1239
DIABETES	18.60	1	844	<.0001
BSI	123.15	1	844	<.0001
WOUND	8.27	1	844	0.0041
newage	0.65	1	844	0.4201

Analysis of Maximum Likelihood Estimates					
Parameter		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-2.5522	0.2434	-10.49	<.0001
SMOKER	Yes	1.2164	0.2678	4.54	<.0001
mrsafinal	MRSA	0.6836	0.2279	3.00	0.0028
kidney	Yes	0.7472	0.4851	1.54	0.1239
DIABETES	Yes	1.2194	0.2828	4.31	<.0001
BSI	Yes	4.5960	0.4142	11.10	<.0001
WOUND	Yes	0.6934	0.2410	2.88	0.0041
newage		0.00406	0.00504	0.81	0.4201
NOTE: The degrees of freedom for the t tests is 844.					

Odds Ratio Estimates			
Effect	Point Estimate	95% Confidence Limits	
SMOKER Yes vs No	3.375	1.995	5.709
mrsafinal MRSA vs MSSA	1.981	1.266	3.098
kidney Yes vs No	2.111	0.815	5.471
DIABETES Yes vs No	3.385	1.943	5.897
BSI Yes vs No	99.091	43.954	223.391
WOUND Yes vs No	2.000	1.246	3.211
newage	1.004	0.994	1.014
NOTE: The degrees of freedom in computing the confidence limits is 844.			

The SURVEYLOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	83.3	**Somers' D**	0.674
Percent Discordant	15.9	**Gamma**	0.679
Percent Tied	0.8	**Tau-a**	0.285
Pairs	151040	**c**	0.837

The SURVEYLOGISTIC Procedure

Model Information	
Data Set	WORK.HOP
Response Variable	hosp
Number of Response Levels	2
Stratum Variable	INVASIVE
Number of Strata	2
Weight Variable	WEIGHT
Model	Binary Logit
Optimization Technique	Newton-Raphson
Variance Adjustment	Degrees of Freedom (DF)

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	601
Number of Observations Used	601
Sum of Weights Read	1456
Sum of Weights Used	1456

Response Profile			
Ordered Value	**hosp**	**Total Frequency**	**Total Weight**
1	No	145	523.00000
2	Yes	456	933.00000

Probability modeled is hosp='Yes'.

Class Level Information		
Class	**Value**	**Design Variables**
mrsafinal	**MRSA**	1
	MSSA	0
kidney	**No**	0
	Yes	1
DIABETES	**No**	0
	Yes	1
SMOKER	**No**	0
	Yes	1

The SURVEYLOGISTIC Procedure

Class Level Information		
Class	**Value**	**Design Variables**
BSI	**No**	0
	Yes	1
WOUND	**No**	0
	Yes	1

Stratum Information		
Stratum Index	**INVASIVE**	**N Obs**
1	No	274
2	Yes	327

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	1903.415	1544.926
SC	1908.698	1587.194
-2 Log L	1901.415	1528.926

R-Square	0.2257	**Max-rescaled R-Square**	0.3096

Testing Global Null Hypothesis: BETA=0				
Test	**F Value**	**Num DF**	**Den DF**	**Pr > F**
Likelihood Ratio	21.95	6.9999	4192.96	<.0001
Score	40.62	7	593	<.0001
Wald	10.58	7	593	<.0001
NOTE: Second-order Rao-Scott design correction 0.0000 applied to the Likelihood Ratio test.				

The SURVEYLOGISTIC Procedure

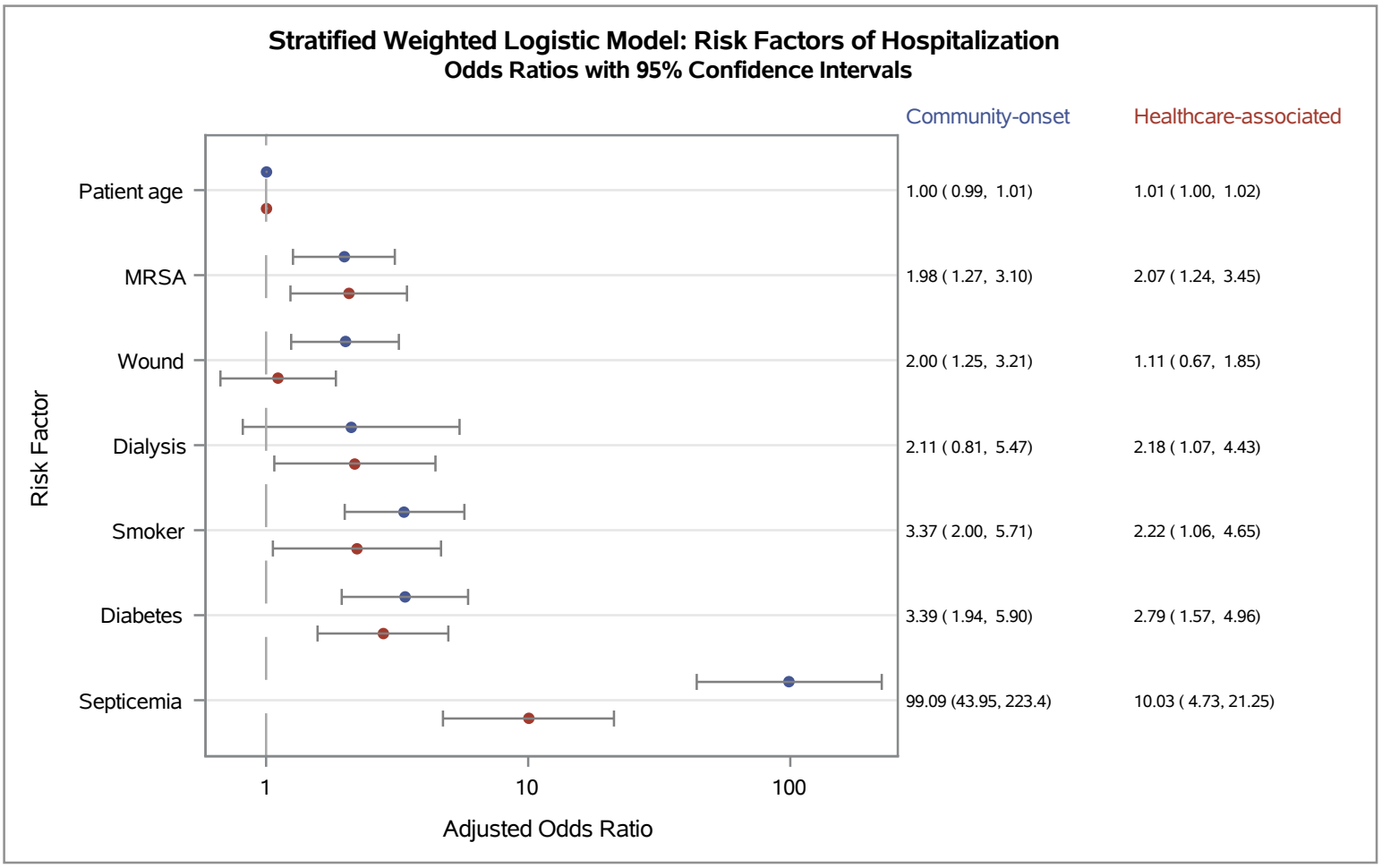
Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
SMOKER	4.50	1	599	0.0342
mrsafinal	7.76	1	599	0.0055
kidney	4.68	1	599	0.0309
DIABETES	12.32	1	599	0.0005
BSI	36.32	1	599	<.0001
WOUND	0.17	1	599	0.6819
newage	1.27	1	599	0.2608

Analysis of Maximum Likelihood Estimates					
Parameter		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-0.9211	0.3420	-2.69	0.0073
SMOKER	Yes	0.7982	0.3761	2.12	0.0342
mrsafinal	MRSA	0.7257	0.2606	2.79	0.0055
kidney	Yes	0.7799	0.3605	2.16	0.0309
DIABETES	Yes	1.0265	0.2924	3.51	0.0005
BSI	Yes	2.3051	0.3825	6.03	<.0001
WOUND	Yes	0.1059	0.2583	0.41	0.6819
newage		0.00669	0.00594	1.13	0.2608
NOTE: The degrees of freedom for the t tests is 599.					

Odds Ratio Estimates			
Effect	Point Estimate	95% Confidence Limits	
SMOKER Yes vs No	2.222	1.061	4.650
mrsafinal MRSA vs MSSA	2.066	1.239	3.447
kidney Yes vs No	2.181	1.075	4.428
DIABETES Yes vs No	2.791	1.572	4.957
BSI Yes vs No	10.025	4.730	21.248
WOUND Yes vs No	1.112	0.669	1.846
newage	1.007	0.995	1.019
NOTE: The degrees of freedom in computing the confidence limits is 599.			

The SURVEYLOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	81.3	**Somers' D**	0.630
Percent Discordant	18.3	**Gamma**	0.632
Percent Tied	0.4	**Tau-a**	0.231
Pairs	66120	**c**	0.815


Stratified Weighted Logistic Model: Risk Factors of Hospitalization
Odds Ratios with 95% Confidence Intervals
Community-onset
Healthcare-associated
Patient age
MRSA
Wound
Dialysis
Smoker
Diabetes
Septicemia
1.00 (0.99, 1.01)
1.01 (1.00, 1.02)
1.98 (1.27, 3.10)
2.07 (1.24, 3.45)
2.00 (1.25, 3.21)
1.11 (0.67, 1.85)
2.11 (0.81, 5.47)
2.18 (1.07, 4.43)
3.37 (2.00, 5.71)
2.22 (1.06, 4.65)
3.39 (1.94, 5.90)
2.79 (1.57, 4.96)
99.09 (43.95, 223.4)
10.03 (4.73, 21.25)
Risk Factor
1
10
100
Adjusted Odds Ratio

Weighted Logistic Random-Intercept Model Conditional on Hospital Cluster

The GLIMMIX Procedure

Model Information	
Data Set	S.STAPH
Response Variable	hosp
Response Distribution	Binary
Link Function	Logit
Variance Function	Default
Variance Matrix Blocked By	TXHOSP
Estimation Technique	Maximum Likelihood
Likelihood Approximation	Gauss-Hermite Quadrature
Degrees of Freedom Method	Between-Within
Fixed Effects SE Adjustment	Sandwich - MBN(df,r=1,d=2)

Class Level Information		
Class	**Levels**	**Values**
TXHOSP	35	GA002 GA003 GA004 GA006 GA008 GA009 GA010 GA011 GA013 GA015 GA016 GA018 GA020 GA021 GA024 GA026 GA027 GA029 GA030 GA032 GA034 GA040 GA046 GA048 GA050 GA056 GA059 GA065 GA066 GA069 GA070 GA071 GA308 GAMDO OSODC
mrsafinal	2	MRSA MSSA
kidney	2	Yes No
DIABETES	2	Yes No
SMOKER	2	Yes No
WOUND	2	Yes No
BSI	2	Yes No

Number of Observations Read	1447
Number of Observations Used	1447

Response Profile		
Ordered Value	**hosp**	**Total Frequency**
1	No	735
2	Yes	712

The GLIMMIX procedure is modeling the probability that hosp='Yes'.

The GLIMMIX Procedure

Dimensions	
G-side Cov. Parameters	1
Columns in X	14
Columns in Z per Subject	1
Subjects (Blocks in V)	35
Max Obs per Subject	447

Optimization Information	
Optimization Technique	Dual Quasi-Newton
Parameters in Optimization	9
Lower Boundaries	1
Upper Boundaries	0
Fixed Effects	Not Profiled
Starting From	GLM estimates
Quadrature Points	1

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	0	4	2809.7671492	.	2776.37
1	0	6	2798.1628166	11.60433259	120.7446
2	0	4	2738.8833011	59.27951551	40.08431
3	0	2	2732.1785248	6.70477633	19.49736
4	0	4	2728.8319698	3.34655496	14.21317
5	0	2	2728.0560481	0.77592168	4.021616
6	0	3	2727.5457195	0.51032860	34.32043
7	0	2	2727.0471694	0.49855013	35.08955
8	0	2	2726.3982854	0.64888401	8.700023
9	0	3	2726.1195295	0.27875594	9.737444
10	0	3	2726.0684443	0.05108520	3.665075
11	0	3	2726.0633297	0.00511460	1.240708
12	0	3	2726.0609073	0.00242232	0.580288
13	0	3	2726.0600159	0.00089147	0.146745
14	0	3	2726.0600102	0.00000571	0.011663

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

Weighted Logistic Random-Intercept Model Conditional on Hospital Cluster

The GLIMMIX Procedure

Fit Statistics	
-2 Log Likelihood	2726.06
AIC (smaller is better)	2744.06
AICC (smaller is better)	2744.19
BIC (smaller is better)	2758.06
CAIC (smaller is better)	2767.06
HQIC (smaller is better)	2748.89

Fit Statistics for Conditional Distribution	
-2 log L(hosp | r. effects)	2605.19
Pearson Chi-Square	1867.72
Pearson Chi-Square / DF	1.29

Covariance Parameter Estimates					
Cov Parm	**Subject**	**Estimate**	**Standard Error**	**Z Value**	**Pr > Z**
Intercept	TXHOSP	3.3699	2.2234	1.52	0.0648

Solutions for Fixed Effects											
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
Intercept							-2.2875	0.5930	34	-3.86	0.0005
SMOKER				Yes			0.5006	0.3209	18	1.56	0.1362
SMOKER				No			0	.	.	.	.
mrsafinal	MRSA						0.01493	0.2164	24	0.07	0.9456
mrsafinal	MSSA						0	.	.	.	.
kidney		Yes					1.2379	0.3360	22	3.68	0.0013
kidney		No					0	.	.	.	.
DIABETES			Yes				0.7665	0.2814	22	2.72	0.0124
DIABETES			No				0	.	.	.	.
WOUND					Yes		0.4193	0.2014	21	2.08	0.0498
WOUND					No		0	.	.	.	.
BSI						Yes	2.7266	0.3766	24	7.24	<.0001
BSI						No	0	.	.	.	.
newage							0.02178	0.005370	4321	4.06	<.0001

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_BSI**
			Yes			44.242				No		
MRSA						44.242	MSSA					
	Yes					44.242		No				
		Yes				44.242			No			
				Yes		44.242					No	
					Yes	44.242						No
						45.242						

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	_newage
			Yes			44.242				No		44.242
MRSA						44.242	MSSA					44.242
	Yes					44.242		No				44.242
		Yes				44.242			No			44.242
				Yes		44.242					No	44.242
					Yes	44.242						44.242
						45.242						44.242

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	Estimate
			Yes			44.242				No		1.650
MRSA						44.242	MSSA					1.015
	Yes					44.242		No				3.448
		Yes				44.242			No			2.152
				Yes		44.242					No	1.521
					Yes	44.242						15.281
						45.242						1.022

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	DF	95% Confidence Limits
			Yes			44.242				No		18	0.841
MRSA						44.242	MSSA					24	0.649
	Yes					44.242		No				22	1.718
		Yes				44.242			No			22	1.201
				Yes		44.242					No	21	1.000
					Yes	44.242						24	7.024
						45.242						4321	1.011

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Weighted Logistic Random-Intercept Model
Conditional on Hospital Cluster

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	95% Confidence Limits
			Yes			44.242				No		3.238
MRSA						44.242	MSSA					1.587
	Yes					44.242		No				6.923
		Yes				44.242			No			3.858
				Yes		44.242					No	2.312
					Yes	44.242						33.242
						45.242						1.033

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Type III Tests of Fixed Effects

Effect	Num DF	Den DF	Chi-Square	F Value	Pr > ChiSq	Pr > F
SMOKER	1	18	2.43	2.43	0.1188	0.1362
mrsafinal	1	24	0.00	0.00	0.9450	0.9456
kidney	1	22	13.57	13.57	0.0002	0.0013
DIABETES	1	22	7.42	7.42	0.0065	0.0124
WOUND	1	21	4.33	4.33	0.0374	0.0498
BSI	1	24	52.43	52.43	<.0001	<.0001
newage	1	4321	16.45	16.45	<.0001	<.0001

Solution for Random Effects

Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA002	1.0334	0.8120	4355	1.27	0.2032	0.05	-0.5585	2.6253
Intercept	TXHOSP GA003	0.1329	0.6562	4355	0.20	0.8395	0.05	-1.1536	1.4194
Intercept	TXHOSP GA004	1.5172	0.5979	4355	2.54	0.0112	0.05	0.3450	2.6894
Intercept	TXHOSP GA006	0.1466	0.9143	4355	0.16	0.8726	0.05	-1.6460	1.9391
Intercept	TXHOSP GA008	-0.9284	0.6812	4355	-1.36	0.1730	0.05	-2.2638	0.4071
Intercept	TXHOSP GA009	1.6056	0.6720	4355	2.39	0.0169	0.05	0.2882	2.9230
Intercept	TXHOSP GA010	1.1908	0.6076	4355	1.96	0.0501	0.05	-0.00038	2.3820
Intercept	TXHOSP GA011	1.3265	0.5764	4355	2.30	0.0214	0.05	0.1964	2.4566
Intercept	TXHOSP GA013	1.1744	0.7535	4355	1.56	0.1192	0.05	-0.3028	2.6516
Intercept	TXHOSP GA015	1.8955	0.6849	4355	2.77	0.0057	0.05	0.5527	3.2382
Intercept	TXHOSP GA016	0.7896	1.4907	4355	0.53	0.5963	0.05	-2.1328	3.7121

The GLIMMIX Procedure

Solution for Random Effects

Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA018	0.5921	0.6871	4355	0.86	0.3889	0.05	-0.7550	1.9392
Intercept	TXHOSP GA020	1.0831	0.5938	4355	1.82	0.0682	0.05	-0.08112	2.2473
Intercept	TXHOSP GA021	1.0662	0.6055	4355	1.76	0.0783	0.05	-0.1208	2.2533
Intercept	TXHOSP GA024	0.7462	0.5985	4355	1.25	0.2126	0.05	-0.4273	1.9196
Intercept	TXHOSP GA026	1.3636	0.6238	4355	2.19	0.0289	0.05	0.1407	2.5865
Intercept	TXHOSP GA027	1.5192	0.6421	4355	2.37	0.0180	0.05	0.2603	2.7781
Intercept	TXHOSP GA029	-0.3851	1.5919	4355	-0.24	0.8089	0.05	-3.5060	2.7358
Intercept	TXHOSP GA030	-1.7577	1.1774	4355	-1.49	0.1356	0.05	-4.0660	0.5506
Intercept	TXHOSP GA032	1.7465	0.6516	4355	2.68	0.0074	0.05	0.4691	3.0239
Intercept	TXHOSP GA034	-0.4074	0.6659	4355	-0.61	0.5407	0.05	-1.7130	0.8981
Intercept	TXHOSP GA040	-4.6288	0.8987	4355	-5.15	<.0001	0.05	-6.3908	-2.8668
Intercept	TXHOSP GA046	0.2668	0.7549	4355	0.35	0.7238	0.05	-1.2133	1.7468
Intercept	TXHOSP GA048	-0.03924	1.0758	4355	-0.04	0.9709	0.05	-2.1483	2.0698
Intercept	TXHOSP GA050	-1.7129	1.4468	4355	-1.18	0.2365	0.05	-4.5494	1.1236
Intercept	TXHOSP GA056	0.3922	1.6040	4355	0.24	0.8068	0.05	-2.7524	3.5368
Intercept	TXHOSP GA059	0.4726	0.6188	4355	0.76	0.4451	0.05	-0.7406	1.6859
Intercept	TXHOSP GA065	-3.4060	1.3883	4355	-2.45	0.0142	0.05	-6.1277	-0.6842
Intercept	TXHOSP GA066	-0.8944	1.3783	4355	-0.65	0.5164	0.05	-3.5965	1.8077
Intercept	TXHOSP GA069	1.4220	1.4749	4355	0.96	0.3350	0.05	-1.4694	4.3135
Intercept	TXHOSP GA070	0.8376	0.6511	4355	1.29	0.1984	0.05	-0.4390	2.1141
Intercept	TXHOSP GA071	-0.1330	0.6855	4355	-0.19	0.8462	0.05	-1.4769	1.2110
Intercept	TXHOSP GA308	-2.3440	1.3530	4355	-1.73	0.0833	0.05	-4.9966	0.3086
Intercept	TXHOSP GAMDO	-3.2892	0.5959	4355	-5.52	<.0001	0.05	-4.4574	-2.1210
Intercept	TXHOSP OSODC	-1.8421	1.4661	4355	-1.26	0.2090	0.05	-4.7164	1.0322

The GLIMMIX Procedure

Empirical Correlation Matrix for Fixed Effects													
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Row**	**Col1**	**Col2**	**Col3**	**Col4**	**Col5**	**Col6**
Intercept							**1**	1.0000	-0.08803		-0.2056		-0.06619
SMOKER				Yes			**2**	-0.08803	1.0000		0.08159		0.03500
SMOKER				No			**3**			1.0000			
mrsafinal	MRSA						**4**	-0.2056	0.08159		1.0000		0.1599
mrsafinal	MSSA						**5**					1.0000	
kidney		Yes					**6**	-0.06619	0.03500		0.1599		1.0000
kidney		No					**7**						
DIABETES			Yes				**8**	-0.04415	0.2710		0.1505		-0.2076
DIABETES			No				**9**						
WOUND					Yes		**10**	-0.1236	0.3643		0.2547		-0.2413
WOUND					No		**11**						
BSI						Yes	**12**	-0.07947	0.1116		0.1467		0.02663
BSI						No	**13**						
newage							**14**	-0.1829	-0.07769		-0.3066		-0.3054

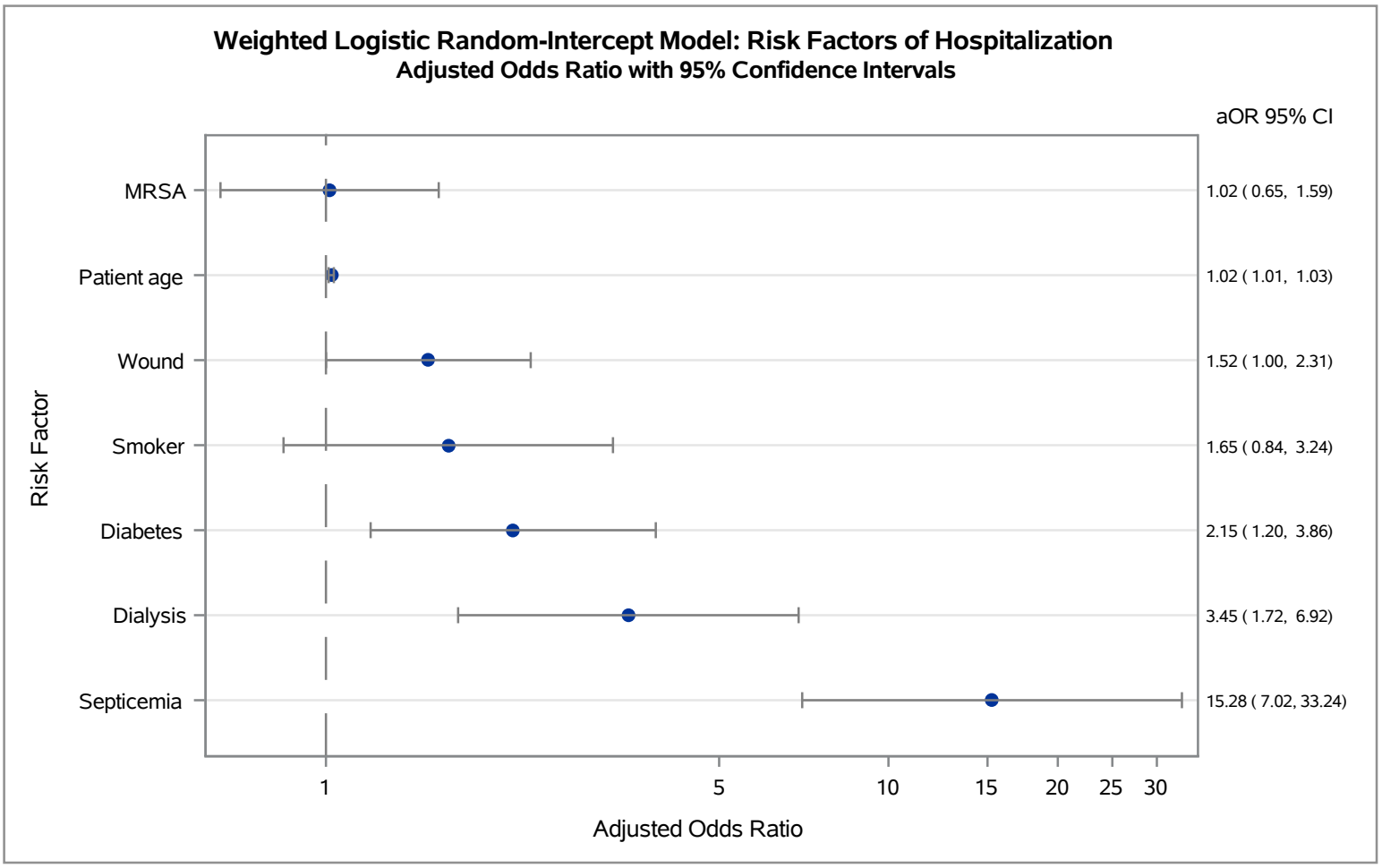
The GLIMMIX Procedure

Empirical Correlation Matrix for Fixed Effects

Effect	mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	Row	Col7	Col8	Col9	Col10	Col11	Col12	Col13
Intercept							**1**		-0.04415		-0.1236		-0.07947	
SMOKER				Yes			**2**		0.2710		0.3643		0.1116	
SMOKER				No			**3**							
mrsafinal	MRSA						**4**		0.1505		0.2547		0.1467	
mrsafinal	MSSA						**5**							
kidney		Yes					**6**		-0.2076		-0.2413		0.02663	
kidney		No					**7**	1.0000						
DIABETES			Yes				**8**		1.0000		0.07682		-0.05413	
DIABETES			No				**9**			1.0000				
WOUND					Yes		**10**		0.07682		1.0000		0.2771	
WOUND					No		**11**					1.0000		
BSI						Yes	**12**		-0.05413		0.2771		1.0000	
BSI						No	**13**							1.0000
newage							**14**		-0.1068		0.03849		-0.04147	

The GLIMMIX Procedure

Empirical Correlation Matrix for Fixed Effects								
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Row**	**Col14**
Intercept							**1**	-0.1829
SMOKER				Yes			**2**	-0.07769
SMOKER				No			**3**	
mrsafinal	MRSA						**4**	-0.3066
mrsafinal	MSSA						**5**	
kidney		Yes					**6**	-0.3054
kidney		No					**7**	
DIABETES			Yes				**8**	-0.1068
DIABETES			No				**9**	
WOUND					Yes		**10**	0.03849
WOUND					No		**11**	
BSI						Yes	**12**	-0.04147
BSI						No	**13**	
newage							**14**	1.0000


Weighted Logistic Random-Intercept Model: Risk Factors of Hospitalization
Adjusted Odds Ratio with 95% Confidence Intervals
aOR 95% CI
MRSA
Patient age
Wound
Smoker
Diabetes
Dialysis
Septicemia
1.02 (0.65, 1.59)
1.02 (1.01, 1.03)
1.52 (1.00, 2.31)
1.65 (0.84, 3.24)
2.15 (1.20, 3.86)
3.45 (1.72, 6.92)
15.28 (7.02, 33.24)
Risk Factor
1
5
10
15
20
25
30
Adjusted Odds Ratio

The GLIMMIX Procedure

Model Information	
Data Set	WORK.COMM
Response Variable	hosp
Response Distribution	Binary
Link Function	Logit
Variance Function	Default
Variance Matrix Blocked By	TXHOSP
Estimation Technique	Maximum Likelihood
Likelihood Approximation	Gauss-Hermite Quadrature
Degrees of Freedom Method	Between-Within
Fixed Effects SE Adjustment	Sandwich - MBN(df,r=1,d=2)

Class Level Information		
Class	**Levels**	**Values**
TXHOSP	30	GA002 GA003 GA004 GA006 GA008 GA009 GA010 GA011 GA013 GA015 GA016 GA018 GA020 GA021 GA024 GA026 GA027 GA030 GA032 GA034 GA040 GA046 GA048 GA050 GA059 GA066 GA069 GA070 GA071 GAMDO
mrsafinal	2	MRSA MSSA
kidney	2	Yes No
DIABETES	2	Yes No
SMOKER	2	Yes No
WOUND	2	Yes No
BSI	2	Yes No

Number of Observations Read	846
Number of Observations Used	846

Response Profile		
Ordered Value	**hosp**	**Total Frequency**
1	No	590
2	Yes	256

The GLIMMIX procedure is modeling the probability that hosp='Yes'.

The GLIMMIX Procedure

Dimensions	
G-side Cov. Parameters	1
Columns in X	14
Columns in Z per Subject	1
Subjects (Blocks in V)	30
Max Obs per Subject	380

Optimization Information	
Optimization Technique	Dual Quasi-Newton
Parameters in Optimization	9
Lower Boundaries	1
Upper Boundaries	0
Fixed Effects	Not Profiled
Starting From	GLM estimates
Quadrature Points	1

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	0	4	1501.0917107	.	2753.628
1	0	6	1480.828851	20.26285972	79.96838
2	0	2	1446.3052458	34.52360519	25.9747
3	0	2	1438.6102748	7.69497099	25.24847
4	0	4	1434.7206514	3.88962333	47.57425
5	0	4	1431.4966568	3.22399465	12.60808
6	0	3	1431.0656799	0.43097691	13.71226
7	0	4	1430.0803129	0.98536704	5.962923
8	0	3	1429.733555	0.34675782	14.80668
9	0	3	1429.6672263	0.06632873	2.606062
10	0	3	1429.6524119	0.01481443	1.815746
11	0	2	1429.6338936	0.01851827	2.527292
12	0	3	1429.6301493	0.00374429	0.276731
13	0	3	1429.6300976	0.00005169	0.184168
14	0	3	1429.6300848	0.00001285	0.016909

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

The GLIMMIX Procedure

Fit Statistics	
-2 Log Likelihood	1429.63
AIC (smaller is better)	1447.63
AICC (smaller is better)	1447.85
BIC (smaller is better)	1460.24
CAIC (smaller is better)	1469.24
HQIC (smaller is better)	1451.66

Fit Statistics for Conditional Distribution	
-2 log L(hosp | r. effects)	1329.79
Pearson Chi-Square	1214.52
Pearson Chi-Square / DF	1.44

Covariance Parameter Estimates					
Cov Parm	**Subject**	**Estimate**	**Standard Error**	**Z Value**	**Pr > Z**
Intercept	TXHOSP	4.1805	2.3097	1.81	0.0351

Solutions for Fixed Effects											
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
Intercept							-2.5290	0.6961	29	-3.63	0.0011
SMOKER				Yes			0.6718	0.4220	17	1.59	0.1298
SMOKER				No			0	.	.	.	.
mrsafinal	MRSA						-0.1810	0.2851	22	-0.64	0.5320
mrsafinal	MSSA						0	.	.	.	.
kidney		Yes					1.6130	0.6778	10	2.38	0.0386
kidney		No					0	.	.	.	.
DIABETES			Yes				1.1581	0.4643	17	2.49	0.0232
DIABETES			No				0	.	.	.	.
WOUND					Yes		0.5562	0.3572	16	1.56	0.1391
WOUND					No		0	.	.	.	.
BSI						Yes	4.0945	0.7998	19	5.12	<.0001
BSI						No	0	.	.	.	.
newage							0.02049	0.007379	2870	2.78	0.0055

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_BSI**
			Yes			39.545				No		
MRSA						39.545	MSSA					
	Yes					39.545		No				
		Yes				39.545			No			
				Yes		39.545					No	
					Yes	39.545						No
						40.545						

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_newage**
			Yes			39.545				No		39.545
MRSA						39.545	MSSA					39.545
	Yes					39.545		No				39.545
		Yes				39.545			No			39.545
				Yes		39.545					No	39.545
					Yes	39.545						39.545
						40.545						39.545

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**Estimate**
			Yes			39.545				No		1.958
MRSA						39.545	MSSA					0.834
	Yes					39.545		No				5.018
		Yes				39.545			No			3.184
				Yes		39.545					No	1.744
					Yes	39.545						60.007
						40.545						1.021

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates													
mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	DF	95% Confidence Limits
			Yes			39.545				No		17	0.804
MRSA						39.545	MSSA					22	0.462
	Yes					39.545		No				10	1.108
		Yes				39.545			No			17	1.196
				Yes		39.545					No	16	0.818
					Yes	39.545						19	11.252
						40.545						2870	1.006

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	95% Confidence Limits
			Yes			39.545				No		4.768
MRSA						39.545	MSSA					1.507
	Yes					39.545		No				22.721
		Yes				39.545			No			8.480
				Yes		39.545					No	3.719
					Yes	39.545						320.033
						40.545						1.036

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Type III Tests of Fixed Effects

Effect	Num DF	Den DF	F Value	Pr > F
SMOKER	1	17	2.53	0.1298
mrsafinal	1	22	0.40	0.5320
kidney	1	10	5.66	0.0386
DIABETES	1	17	6.22	0.0232
WOUND	1	16	2.42	0.1391
BSI	1	19	26.21	<.0001
newage	1	2870	7.71	0.0055

Solution for Random Effects

Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA002	-1.3852	1.0465	2899	-1.32	0.1857	0.05	-3.4372	0.6668
Intercept	TXHOSP GA003	-0.6542	0.8484	2899	-0.77	0.4407	0.05	-2.3177	1.0093
Intercept	TXHOSP GA004	0.7617	0.6833	2899	1.11	0.2651	0.05	-0.5781	2.1015
Intercept	TXHOSP GA006	-1.3408	1.4341	2899	-0.93	0.3499	0.05	-4.1527	1.4712
Intercept	TXHOSP GA008	-1.6991	0.9333	2899	-1.82	0.0688	0.05	-3.5291	0.1309
Intercept	TXHOSP GA009	1.3989	0.8269	2899	1.69	0.0908	0.05	-0.2224	3.0202
Intercept	TXHOSP GA010	1.2832	0.6953	2899	1.85	0.0651	0.05	-0.08013	2.6465
Intercept	TXHOSP GA011	1.2810	0.6697	2899	1.91	0.0559	0.05	-0.03207	2.5941
Intercept	TXHOSP GA013	2.4816	0.8876	2899	2.80	0.0052	0.05	0.7413	4.2219
Intercept	TXHOSP GA015	2.3732	0.8225	2899	2.89	0.0039	0.05	0.7605	3.9860
Intercept	TXHOSP GA016	0.5821	1.6877	2899	0.34	0.7302	0.05	-2.7270	3.8912
Intercept	TXHOSP GA018	1.0116	0.8259	2899	1.22	0.2207	0.05	-0.6077	2.6310

The GLIMMIX Procedure

Solution for Random Effects									
Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA020	0.9734	0.6947	2899	1.40	0.1613	0.05	-0.3887	2.3355
Intercept	TXHOSP GA021	0.6896	0.7048	2899	0.98	0.3279	0.05	-0.6923	2.0715
Intercept	TXHOSP GA024	-0.09621	0.7157	2899	-0.13	0.8931	0.05	-1.4995	1.3071
Intercept	TXHOSP GA026	1.4177	0.7398	2899	1.92	0.0554	0.05	-0.03294	2.8683
Intercept	TXHOSP GA027	1.7194	0.7319	2899	2.35	0.0189	0.05	0.2842	3.1545
Intercept	TXHOSP GA030	-1.7086	1.3302	2899	-1.28	0.1991	0.05	-4.3168	0.8996
Intercept	TXHOSP GA032	1.5642	0.7456	2899	2.10	0.0360	0.05	0.1022	3.0262
Intercept	TXHOSP GA034	-1.4768	0.8780	2899	-1.68	0.0927	0.05	-3.1983	0.2447
Intercept	TXHOSP GA040	-4.0165	1.0574	2899	-3.80	0.0001	0.05	-6.0899	-1.9432
Intercept	TXHOSP GA046	2.8069	1.3843	2899	2.03	0.0427	0.05	0.09259	5.5212
Intercept	TXHOSP GA048	-0.7364	1.5905	2899	-0.46	0.6434	0.05	-3.8551	2.3823
Intercept	TXHOSP GA050	-2.4485	1.6212	2899	-1.51	0.1311	0.05	-5.6272	0.7302
Intercept	TXHOSP GA059	0.8361	0.7259	2899	1.15	0.2495	0.05	-0.5872	2.2595
Intercept	TXHOSP GA066	-0.7882	1.5712	2899	-0.50	0.6160	0.05	-3.8690	2.2927
Intercept	TXHOSP GA069	0.3367	1.8053	2899	0.19	0.8520	0.05	-3.2030	3.8764
Intercept	TXHOSP GA070	1.3729	0.8034	2899	1.71	0.0876	0.05	-0.2024	2.9483
Intercept	TXHOSP GA071	-1.0502	0.8703	2899	-1.21	0.2276	0.05	-2.7566	0.6561
Intercept	TXHOSP GAMDO	-4.2320	0.7083	2899	-5.97	<.0001	0.05	-5.6209	-2.8431

The GLIMMIX Procedure

Model Information	
Data Set	WORK.HOP
Response Variable	hosp
Response Distribution	Binary
Link Function	Logit
Variance Function	Default
Variance Matrix Blocked By	TXHOSP
Estimation Technique	Maximum Likelihood
Likelihood Approximation	Gauss-Hermite Quadrature
Degrees of Freedom Method	Between-Within
Fixed Effects SE Adjustment	Sandwich - MBN(df,r=1,d=2)

Class Level Information		
Class	**Levels**	**Values**
TXHOSP	31	GA002 GA003 GA004 GA006 GA008 GA009 GA010 GA011 GA013 GA015 GA018 GA020 GA021 GA024 GA026 GA027 GA029 GA032 GA034 GA040 GA046 GA048 GA056 GA059 GA065 GA069 GA070 GA071 GA308 GAMDO OSODC
mrsafinal	2	MRSA MSSA
kidney	2	Yes No
DIABETES	2	Yes No
SMOKER	2	Yes No
WOUND	2	Yes No
BSI	2	Yes No

Number of Observations Read	601
Number of Observations Used	601

Response Profile		
Ordered Value	**hosp**	**Total Frequency**
1	No	145
2	Yes	456

The GLIMMIX procedure is modeling the probability that hosp='Yes'.

The GLIMMIX Procedure

Dimensions	
G-side Cov. Parameters	1
Columns in X	14
Columns in Z per Subject	1
Subjects (Blocks in V)	31
Max Obs per Subject	120

Optimization Information	
Optimization Technique	Dual Quasi-Newton
Parameters in Optimization	9
Lower Boundaries	1
Upper Boundaries	0
Fixed Effects	Not Profiled
Starting From	GLM estimates
Quadrature Points	5

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	0	4	1146.8534811	.	326.408
1	0	5	1146.5142917	0.33918935	22.92349
2	0	4	1135.1806641	11.33362762	8.293453
3	0	2	1132.1465315	3.03413262	9.172207
4	0	4	1130.8451183	1.30141320	15.36075
5	0	4	1129.7493425	1.09577577	2.771987
6	0	2	1129.3311559	0.41818661	59.56893
7	0	2	1128.638522	0.69263391	3.230332
8	0	3	1128.3265204	0.31200159	26.83417
9	0	2	1128.1767489	0.14977150	41.32122
10	0	2	1128.127342	0.04940697	49.8322
11	0	2	1128.0514506	0.07589132	19.01861
12	0	3	1128.0280862	0.02336444	5.386648
13	0	3	1128.0140478	0.01403844	0.498978
14	0	3	1128.0139151	0.00013265	0.16206
15	0	3	1128.0139063	0.00000880	0.149955

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

The GLIMMIX Procedure

Fit Statistics	
-2 Log Likelihood	1128.01
AIC (smaller is better)	1146.01
AICC (smaller is better)	1146.32
BIC (smaller is better)	1158.92
CAIC (smaller is better)	1167.92
HQIC (smaller is better)	1150.22

Fit Statistics for Conditional Distribution	
-2 log L(hosp | r. effects)	1034.77
Pearson Chi-Square	596.07
Pearson Chi-Square / DF	0.99

Covariance Parameter Estimates					
Cov Parm	Subject	Estimate	Standard Error	Z Value	Pr > Z
Intercept	TXHOSP	4.0459	3.0019	1.35	0.0889

Solutions for Fixed Effects											
Effect	mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept							-0.4119	0.7588	30	-0.54	0.5912
SMOKER				Yes			0.4916	0.7261	16	0.68	0.5081
SMOKER				No			0	.	.	.	.
mrsafinal	MRSA						0.2375	0.4195	22	0.57	0.5770
mrsafinal	MSSA						0	.	.	.	.
kidney		Yes					0.8999	0.4452	19	2.02	0.0576
kidney		No					0	.	.	.	.
DIABETES			Yes				0.6596	0.3741	19	1.76	0.0940
DIABETES			No				0	.	.	.	.
WOUND					Yes		-0.1607	0.3984	19	-0.40	0.6912
WOUND					No		0	.	.	.	.
BSI						Yes	1.6658	0.5673	21	2.94	0.0079
BSI						No	0	.	.	.	.
newage							0.005249	0.007870	1418	0.67	0.5049

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_BSI**
			Yes			53.62				No		
MRSA						53.62	MSSA					
	Yes					53.62		No				
		Yes				53.62			No			
				Yes		53.62					No	
					Yes	53.62						No
						54.62						

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_newage**
			Yes			53.62				No		53.62
MRSA						53.62	MSSA					53.62
	Yes					53.62		No				53.62
		Yes				53.62			No			53.62
				Yes		53.62					No	53.62
					Yes	53.62						53.62
						54.62						53.62

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**Estimate**
			Yes			53.62				No		1.635
MRSA						53.62	MSSA					1.268
	Yes					53.62		No				2.459
		Yes				53.62			No			1.934
				Yes		53.62					No	0.852
					Yes	53.62						5.290
						54.62						1.005

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates													
mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	DF	95% Confidence Limits
			Yes			53.62				No		16	0.351
MRSA						53.62	MSSA					22	0.531
	Yes					53.62		No				19	0.969
		Yes				53.62			No			19	0.884
				Yes		53.62					No	19	0.370
					Yes	53.62						21	1.626
						54.62						1418	0.990

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	95% Confidence Limits
			Yes			53.62				No		7.620
MRSA						53.62	MSSA					3.027
	Yes					53.62		No				6.245
		Yes				53.62			No			4.232
				Yes		53.62					No	1.960
					Yes	53.62						17.212
						54.62						1.021

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Type III Tests of Fixed Effects

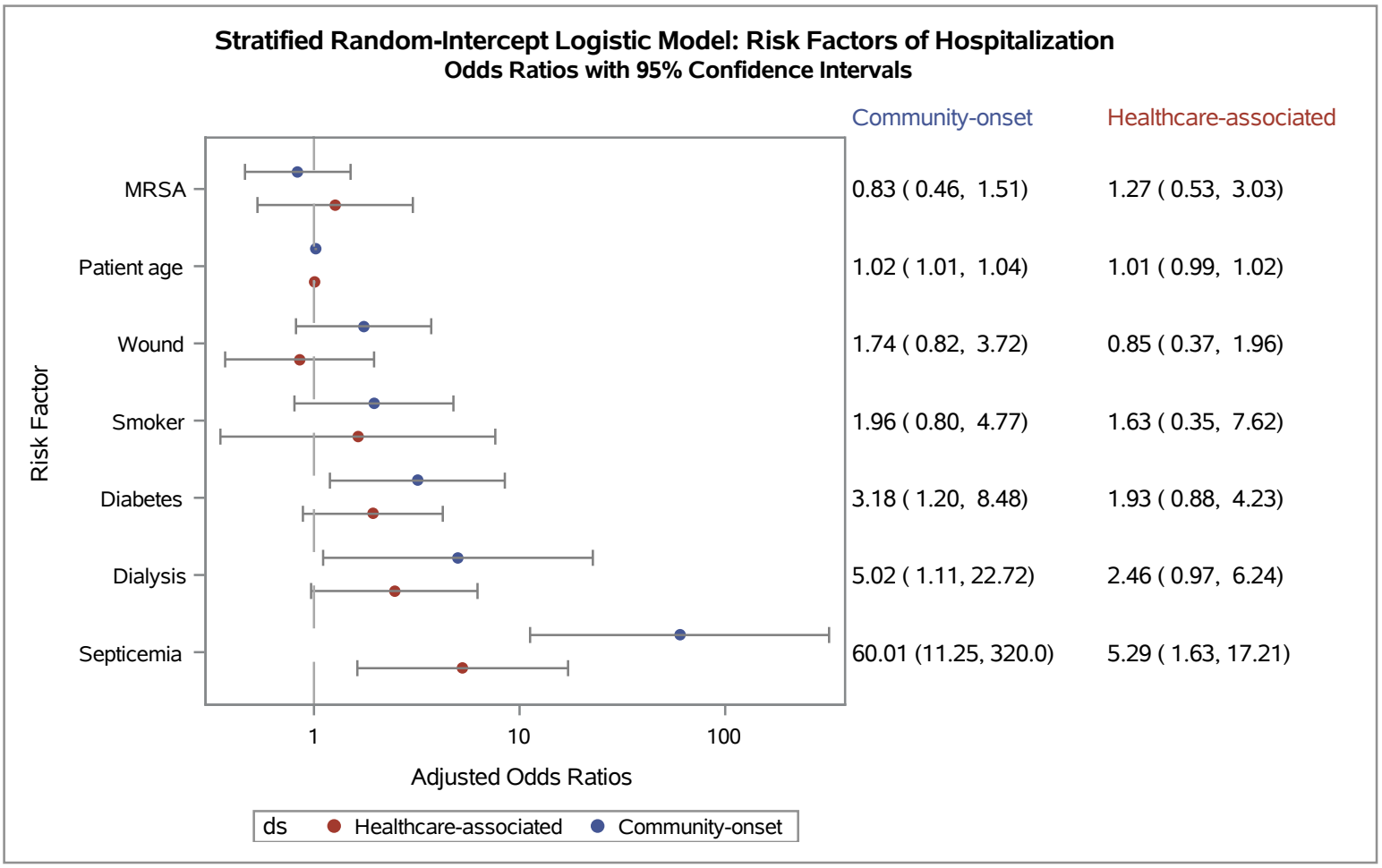
Effect	Num DF	Den DF	F Value	Pr > F
SMOKER	1	16	0.46	0.5081
mrsafinal	1	22	0.32	0.5770
kidney	1	19	4.09	0.0576
DIABETES	1	19	3.11	0.0940
WOUND	1	19	0.16	0.6912
BSI	1	21	8.62	0.0079
newage	1	1418	0.44	0.5049

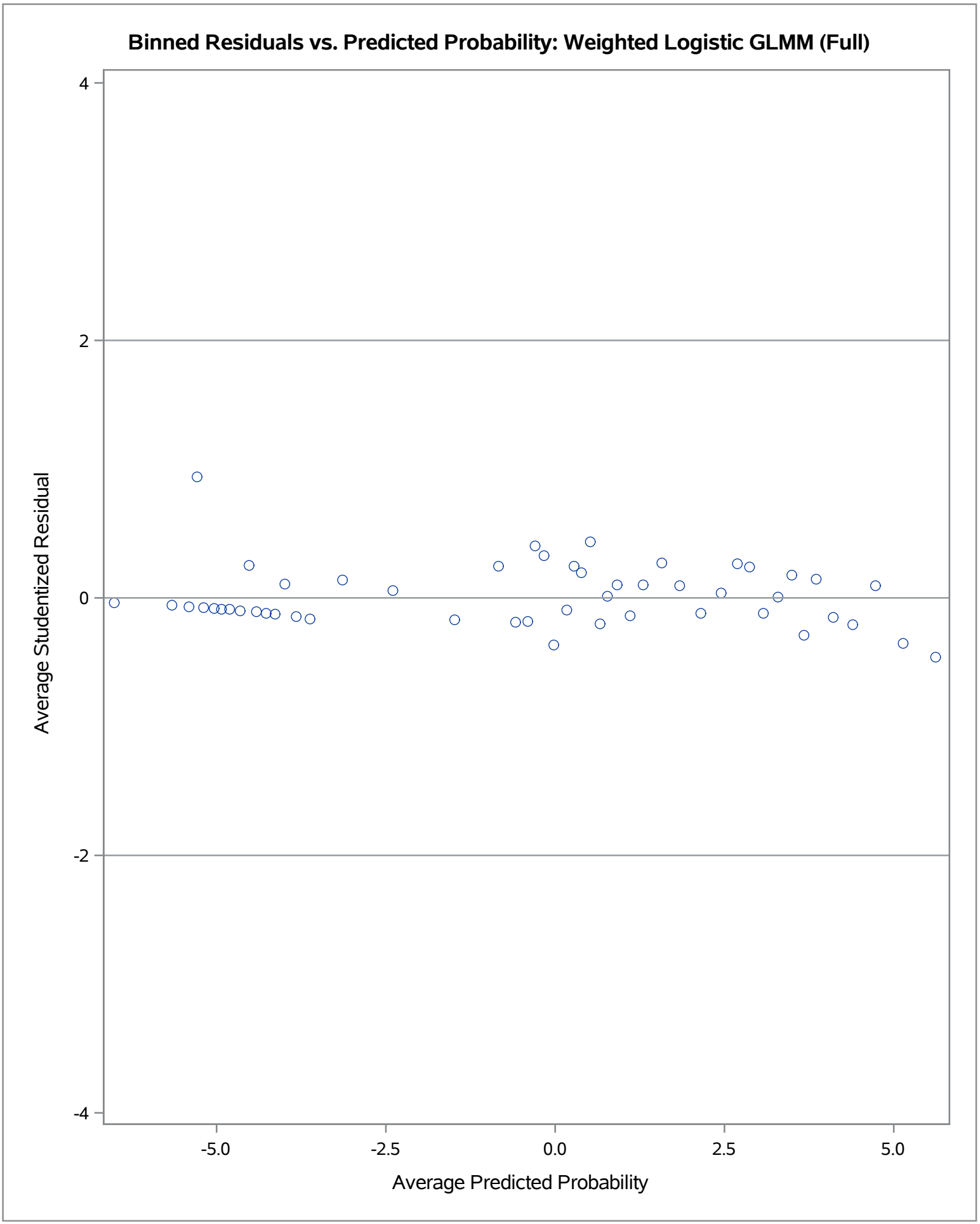
Solution for Random Effects

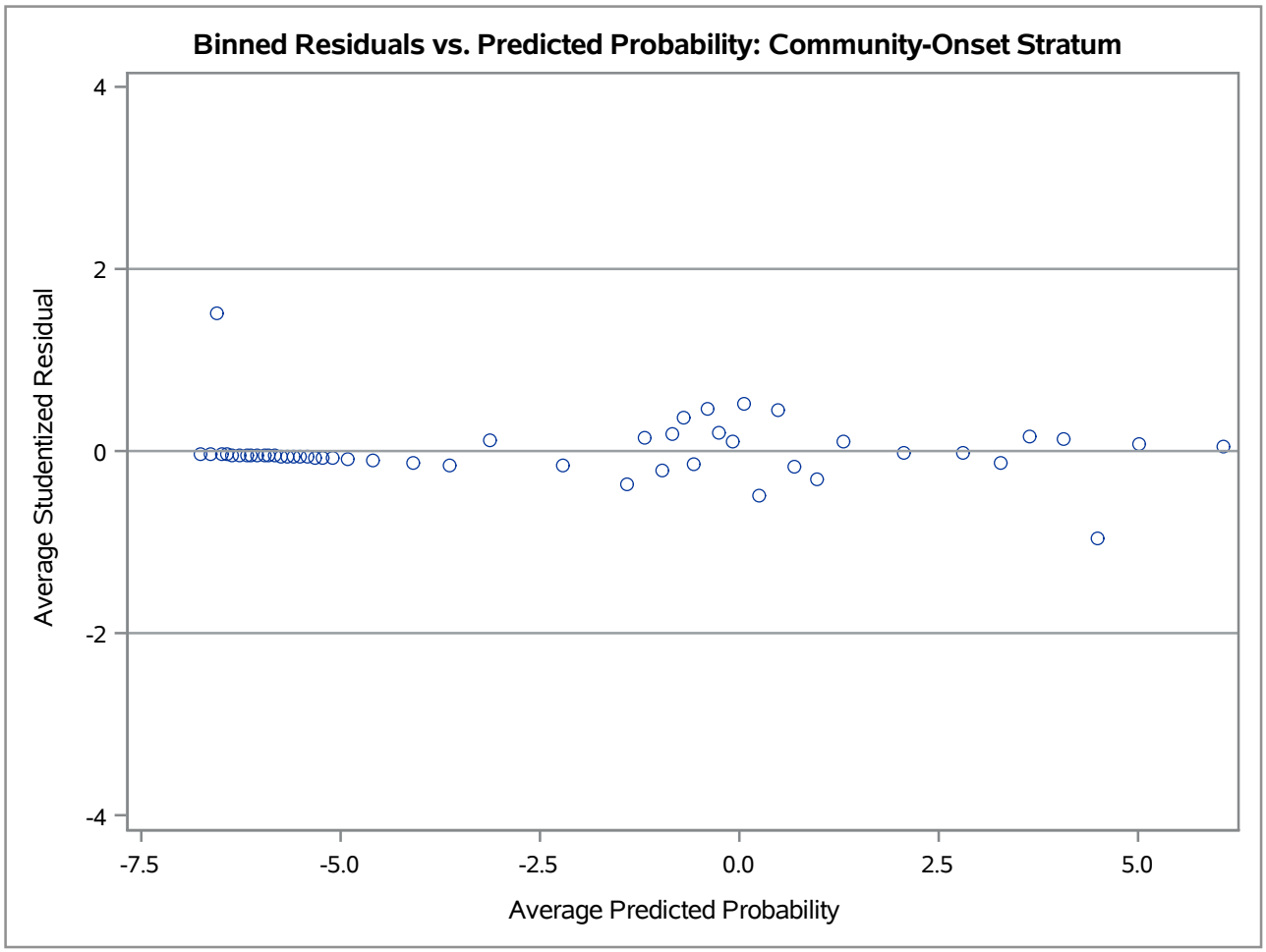
Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA002	2.6027	1.3808	1448	1.88	0.0596	0.05	-0.1059	5.3113
Intercept	TXHOSP GA003	0.5977	0.8245	1448	0.72	0.4686	0.05	-1.0196	2.2150
Intercept	TXHOSP GA004	1.8489	0.7062	1448	2.62	0.0089	0.05	0.4637	3.2342
Intercept	TXHOSP GA006	1.3323	1.5733	1448	0.85	0.3972	0.05	-1.7539	4.4186
Intercept	TXHOSP GA008	-0.9807	0.8354	1448	-1.17	0.2406	0.05	-2.6195	0.6580
Intercept	TXHOSP GA009	1.0063	0.7729	1448	1.30	0.1932	0.05	-0.5099	2.5224
Intercept	TXHOSP GA010	0.8390	0.7660	1448	1.10	0.2736	0.05	-0.6636	2.3417
Intercept	TXHOSP GA011	0.8599	0.6431	1448	1.34	0.1814	0.05	-0.4016	2.1213
Intercept	TXHOSP GA013	-2.0640	1.1511	1448	-1.79	0.0732	0.05	-4.3219	0.1940
Intercept	TXHOSP GA015	-0.1339	0.8388	1448	-0.16	0.8732	0.05	-1.7793	1.5115
Intercept	TXHOSP GA018	0.1910	0.8579	1448	0.22	0.8238	0.05	-1.4918	1.8738
Intercept	TXHOSP GA020	1.6896	0.7831	1448	2.16	0.0311	0.05	0.1534	3.2258

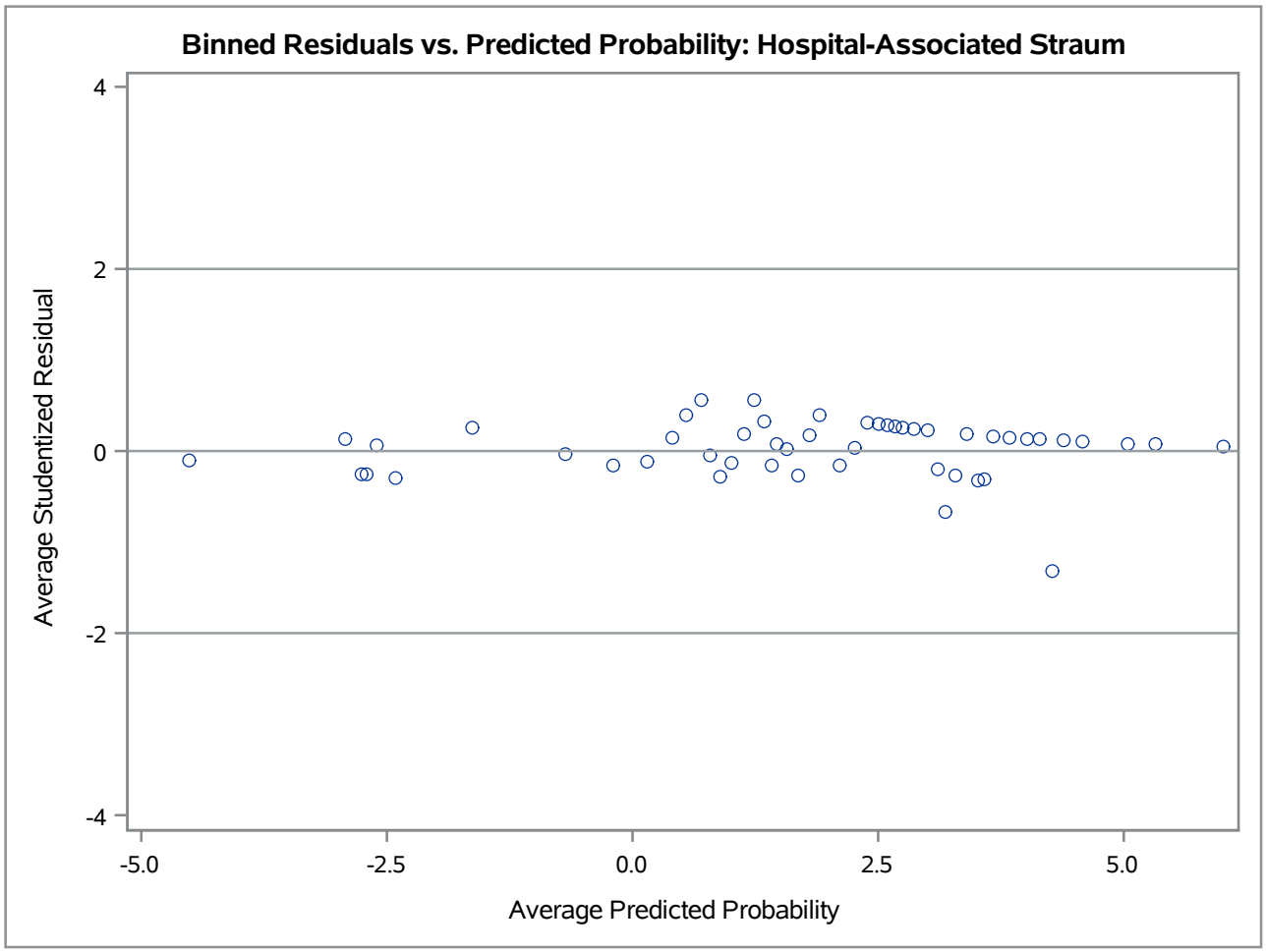
The GLIMMIX Procedure

Solution for Random Effects									
Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA021	1.0536	0.6838	1448	1.54	0.1236	0.05	-0.2877	2.3949
Intercept	TXHOSP GA024	0.5776	0.6655	1448	0.87	0.3856	0.05	-0.7279	1.8831
Intercept	TXHOSP GA026	0.9917	0.7209	1448	1.38	0.1691	0.05	-0.4224	2.4058
Intercept	TXHOSP GA027	0.02234	0.8926	1448	0.03	0.9800	0.05	-1.7286	1.7733
Intercept	TXHOSP GA029	-1.0374	1.5837	1448	-0.66	0.5126	0.05	-4.1440	2.0692
Intercept	TXHOSP GA032	2.9202	1.3270	1448	2.20	0.0279	0.05	0.3170	5.5233
Intercept	TXHOSP GA034	-0.3605	0.7015	1448	-0.51	0.6074	0.05	-1.7366	1.0156
Intercept	TXHOSP GA040	-4.5150	1.1279	1448	-4.00	<.0001	0.05	-6.7275	-2.3025
Intercept	TXHOSP GA046	-1.2222	0.8766	1448	-1.39	0.1634	0.05	-2.9417	0.4972
Intercept	TXHOSP GA048	0.7424	1.6589	1448	0.45	0.6546	0.05	-2.5117	3.9965
Intercept	TXHOSP GA056	0.5880	1.6793	1448	0.35	0.7263	0.05	-2.7061	3.8821
Intercept	TXHOSP GA059	-0.07575	0.7352	1448	-0.10	0.9180	0.05	-1.5179	1.3664
Intercept	TXHOSP GA065	-3.3498	1.5351	1448	-2.18	0.0293	0.05	-6.3611	-0.3385
Intercept	TXHOSP GA069	1.0688	1.6253	1448	0.66	0.5109	0.05	-2.1194	4.2571
Intercept	TXHOSP GA070	0.1242	0.7144	1448	0.17	0.8620	0.05	-1.2772	1.5255
Intercept	TXHOSP GA071	0.3750	0.9252	1448	0.41	0.6853	0.05	-1.4400	2.1900
Intercept	TXHOSP GA308	-2.6334	1.4665	1448	-1.80	0.0727	0.05	-5.5100	0.2432
Intercept	TXHOSP GAMDO	-2.4710	0.6609	1448	-3.74	0.0002	0.05	-3.7674	-1.1746
Intercept	TXHOSP OSODC	-1.8292	1.5960	1448	-1.15	0.2519	0.05	-4.9600	1.3016

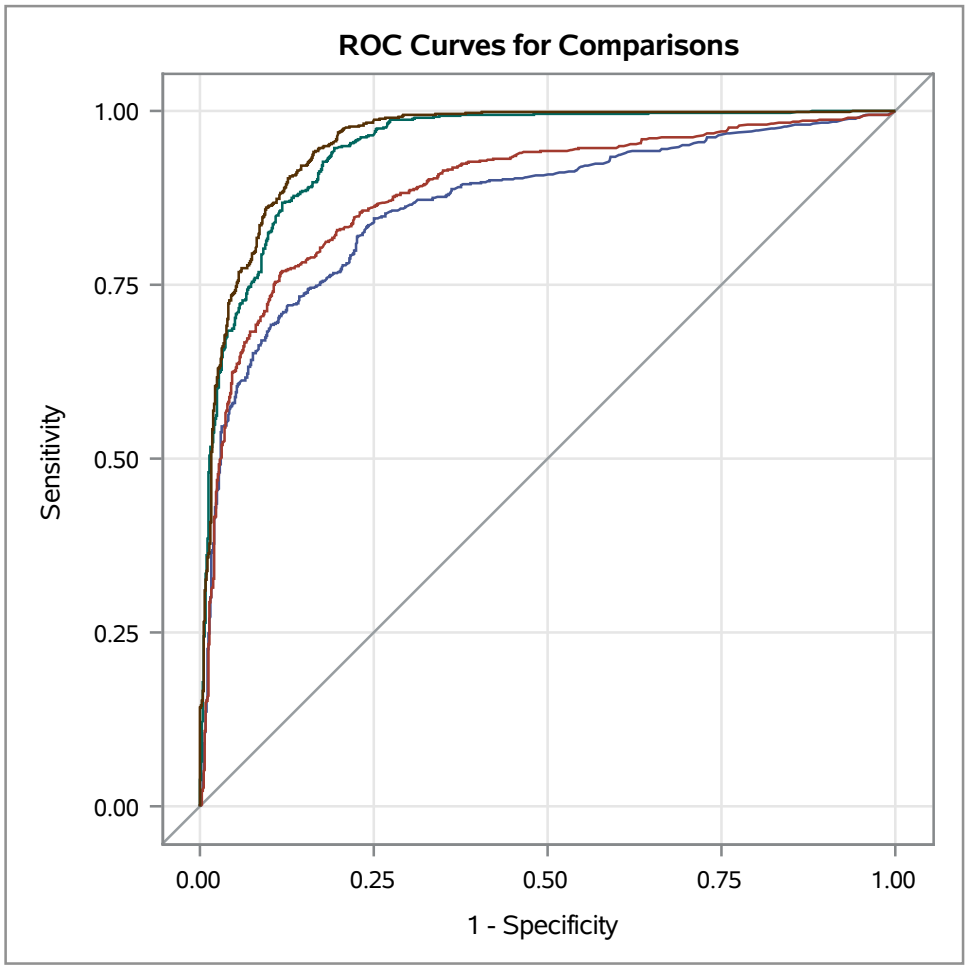

Stratified Random-Intercept Logistic Model: Risk Factors of Hospitalization
Odds Ratios with 95% Confidence Intervals
Community-onset
Healthcare-associated
MRSA
Patient age
Wound
Smoker
Diabetes
Dialysis
Septicemia
0.83 (0.46, 1.51)
1.27 (0.53, 3.03)
1.02 (1.01, 1.04)
1.01 (0.99, 1.02)
1.74 (0.82, 3.72)
0.85 (0.37, 1.96)
1.96 (0.80, 4.77)
1.63 (0.35, 7.62)
3.18 (1.20, 8.48)
1.93 (0.88, 4.23)
5.02 (1.11, 22.72)
2.46 (0.97, 6.24)
60.01 (11.25, 320.0)
5.29 (1.63, 17.21)
Risk Factor
1
10
100
Adjusted Odds Ratios
ds
Healthcare-associated
Community-onset


Binned Residuals vs. Predicted Probability: Weighted Logistic GLMM (Full)
Average Studentized Residual
4
2
0
-2
-4
-5.0
-2.5
0.0
2.5
5.0
Average Predicted Probability


Binned Residuals vs. Predicted Probability: Community-Onset Stratum
Average Studentized Residual
4
2
0
-2
-4
-7.5
-5.0
-2.5
0.0
2.5
5.0
Average Predicted Probability


Binned Residuals vs. Predicted Probability: Hospital-Associated Straum
Average Studentized Residual
4
2
0
-2
-4
-5.0
-2.5
0.0
2.5
5.0
Average Predicted Probability

The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Baseline_Weighted_Logistic_Model	0.8654	0.00980	0.8462	0.8846	0.7309	0.7314	0.3656
Stratified Weighted Logistic Model	0.8869	0.00900	0.8693	0.9046	0.7739	0.7742	0.3871
Random-effects Weighted Logistic Model	0.9471	0.00553	0.9362	0.9579	0.8942	0.8942	0.4473
Stratified, Random-effects Weighted Logistic Model	0.9557	0.00502	0.9459	0.9656	0.9115	0.9115	0.4559

The LOGISTIC Procedure

Model Information	
Data Set	WORK.TRAINING
Response Variable	HOSPITAL
Number of Response Levels	2
Weight Variable	WEIGHT
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1155
Number of Observations Used	1155
Sum of Weights Read	3510
Sum of Weights Used	3510

Response Profile			
Ordered Value	**HOSPITAL**	**Total Frequency**	**Total Weight**
1	0	567	2169.0000
2	1	588	1341.0000

Probability modeled is HOSPITAL='1'.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	4670.717	3330.289
SC	4675.769	3375.756
-2 Log L	4668.717	3312.289

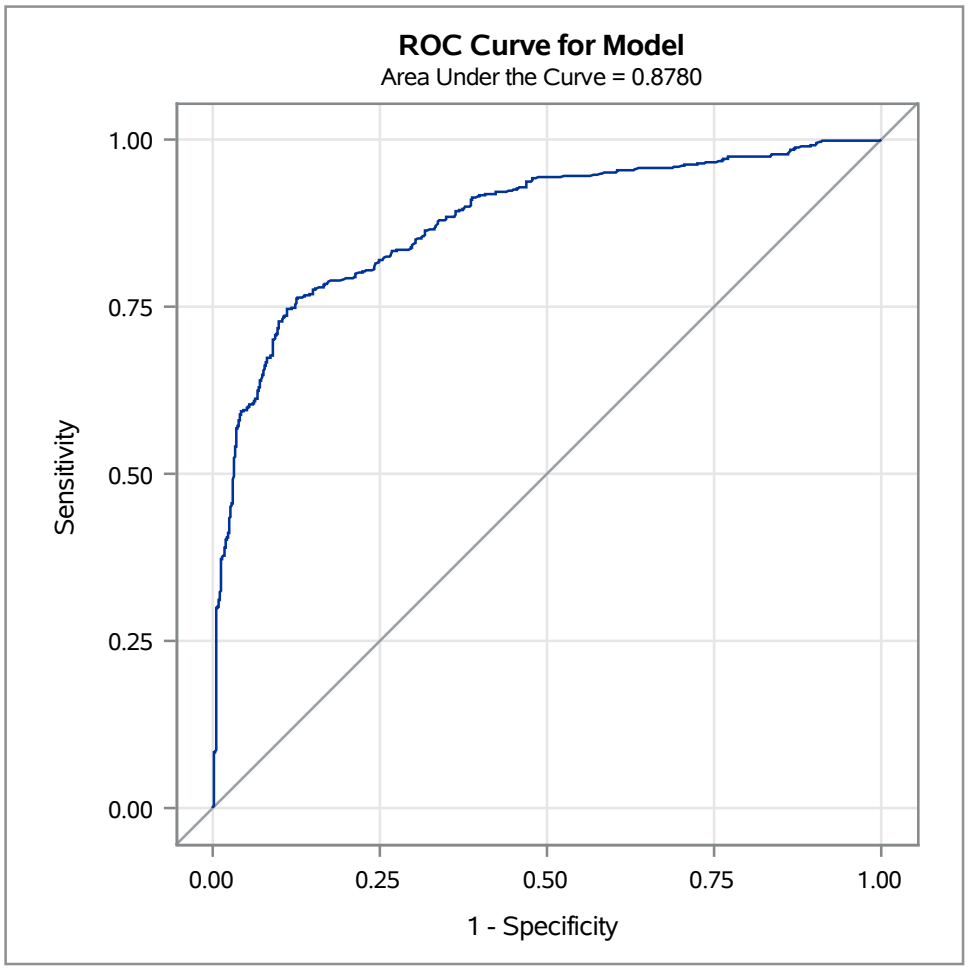
Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	1356.4278	8	<.0001
Score	1147.9990	8	<.0001
Wald	685.2433	8	<.0001

The LOGISTIC Procedure

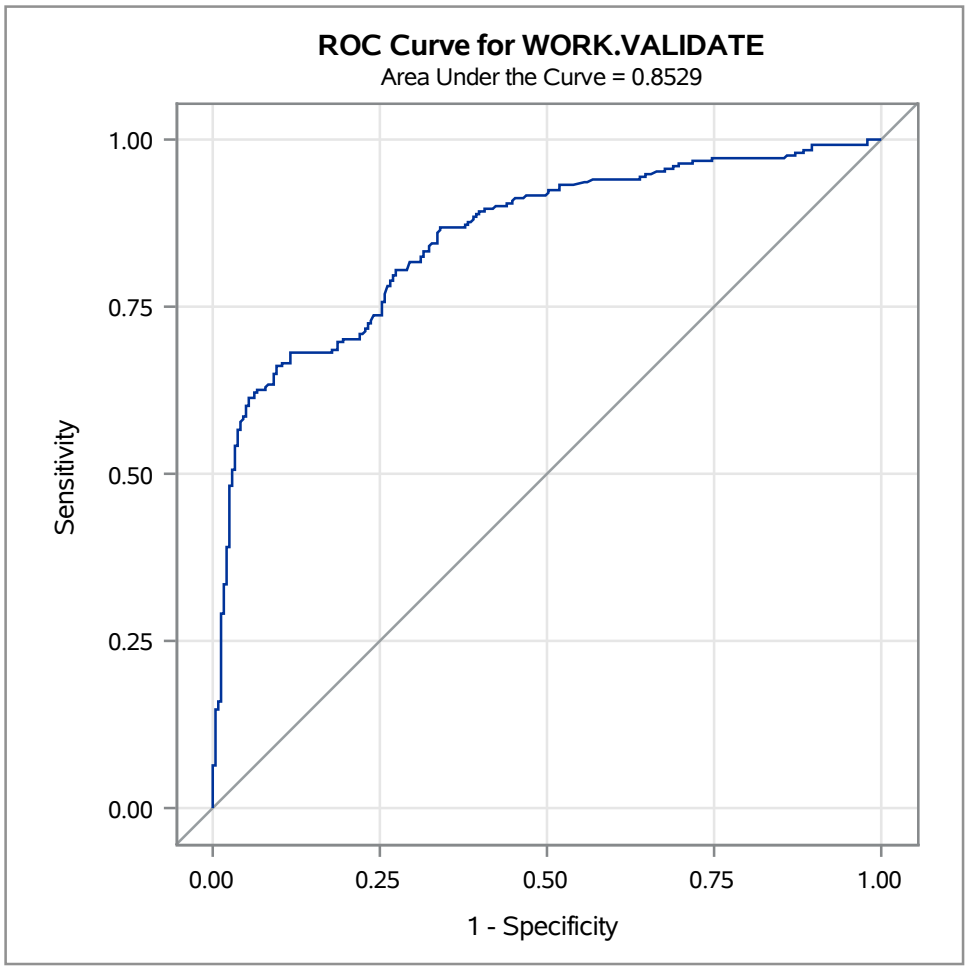
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.1101	0.1331	69.5132	<.0001
UND	1	-1.0933	0.1128	93.9653	<.0001
DISLTC8	1	2.0516	0.2517	66.4630	<.0001
DIABETES	1	0.8131	0.1074	57.3384	<.0001
RENAL	1	1.2007	0.1559	59.3029	<.0001
SST	1	-0.7378	0.0919	64.4613	<.0001
mrsafinal	1	0.8302	0.0919	81.6576	<.0001
newage	1	0.00818	0.00212	14.8212	0.0001
BSI	1	2.7088	0.2573	110.8282	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
UND	0.335	0.269	0.418
DISLTC8	7.780	4.751	12.741
DIABETES	2.255	1.827	2.783
RENAL	3.322	2.448	4.510
SST	0.478	0.399	0.573
mrsafinal	2.294	1.916	2.746
newage	1.008	1.004	1.012
BSI	15.012	9.066	24.857

The LOGISTIC Procedure



The LOGISTIC Procedure



ROC Model: ROC1

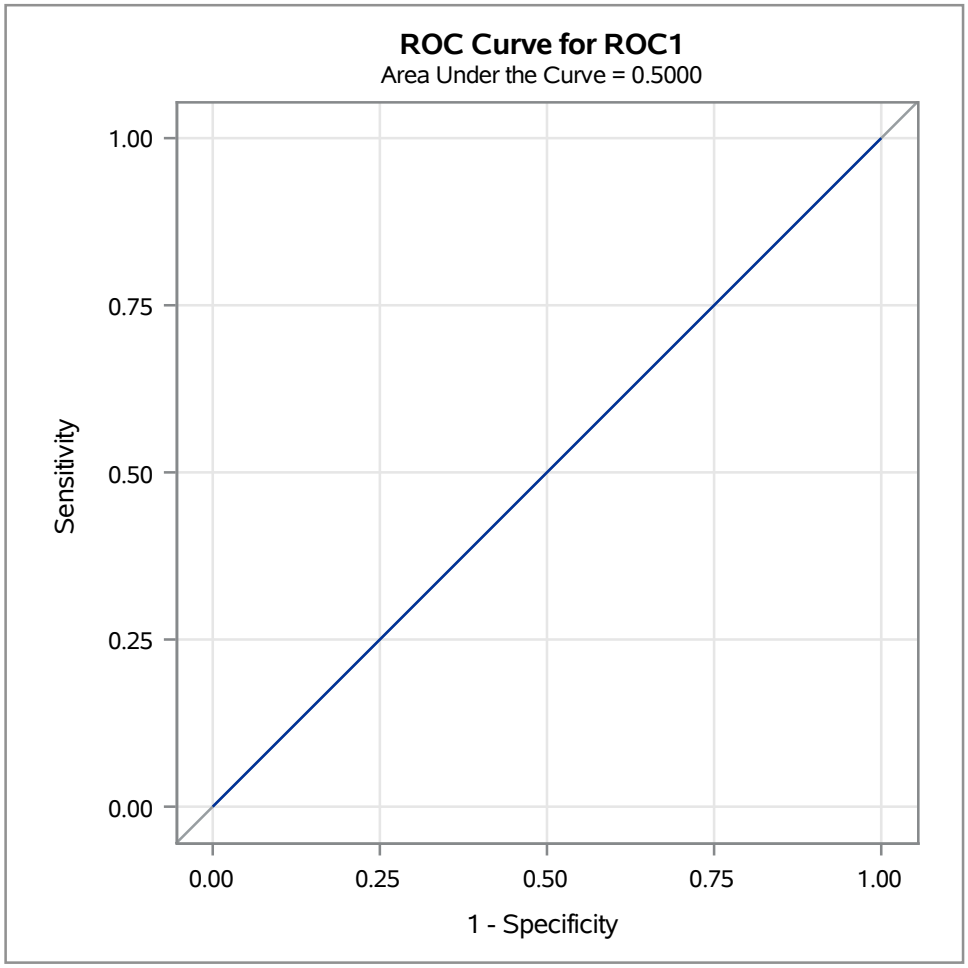
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

-2 Log L	=	4668.717

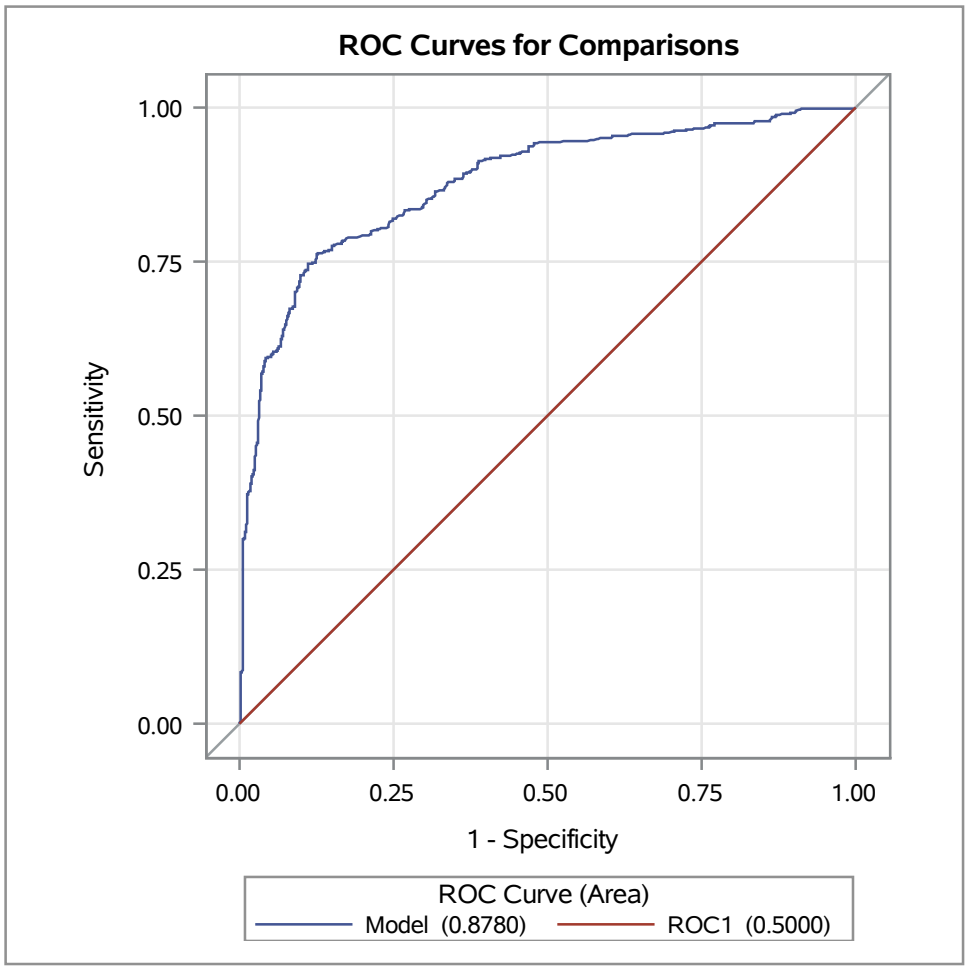
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-0.4809	0.0347	191.6027	<.0001

The LOGISTIC Procedure

ROC Model: ROC1



The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Model	0.8780	0.0102	0.8581	0.8980	0.7561	0.7563	0.3782
ROC1	0.5000	0	0.5000	0.5000	0	.	0

ROC Contrast Test Results			
Contrast	DF	Chi-Square	Pr > ChiSq
Reference = Model	1	1378.7261	<.0001

The LOGISTIC Procedure

Model Information	
Data Set	WORK.TRAINING
Response Variable	HOSPITAL
Number of Response Levels	2
Weight Variable	WEIGHT
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1155
Number of Observations Used	1155
Sum of Weights Read	3510
Sum of Weights Used	3510

Response Profile			
Ordered Value	**HOSPITAL**	**Total Frequency**	**Total Weight**
1	0	567	2169.0000
2	1	588	1341.0000

Probability modeled is HOSPITAL='1'.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	4670.717	3330.289
SC	4675.769	3375.756
-2 Log L	4668.717	3312.289

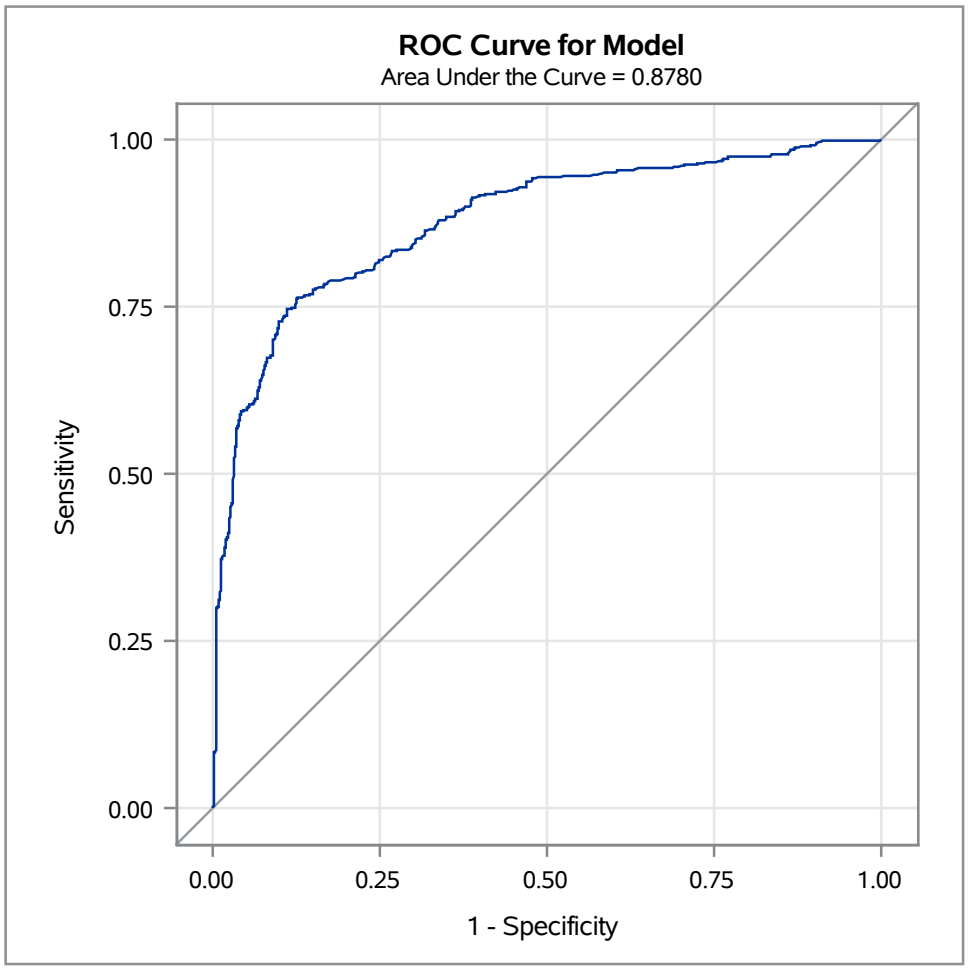
Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	1356.4278	8	<.0001
Score	1147.9990	8	<.0001
Wald	685.2433	8	<.0001

The LOGISTIC Procedure

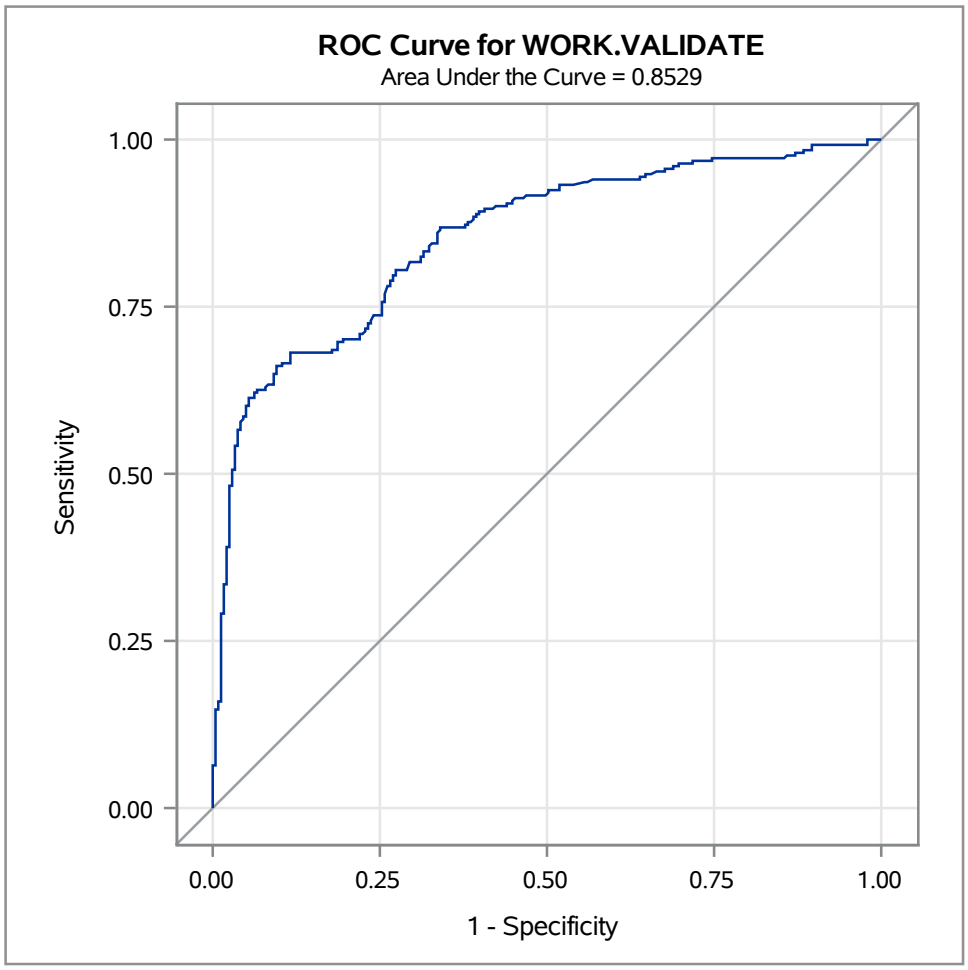
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.1101	0.1331	69.5132	<.0001
UND	1	-1.0933	0.1128	93.9653	<.0001
DISLTC8	1	2.0516	0.2517	66.4630	<.0001
DIABETES	1	0.8131	0.1074	57.3384	<.0001
RENAL	1	1.2007	0.1559	59.3029	<.0001
SST	1	-0.7378	0.0919	64.4613	<.0001
mrsafinal	1	0.8302	0.0919	81.6576	<.0001
newage	1	0.00818	0.00212	14.8212	0.0001
BSI	1	2.7088	0.2573	110.8282	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
UND	0.335	0.269	0.418
DISLTC8	7.780	4.751	12.741
DIABETES	2.255	1.827	2.783
RENAL	3.322	2.448	4.510
SST	0.478	0.399	0.573
mrsafinal	2.294	1.916	2.746
newage	1.008	1.004	1.012
BSI	15.012	9.066	24.857

The LOGISTIC Procedure



The LOGISTIC Procedure



ROC Model: ROC1

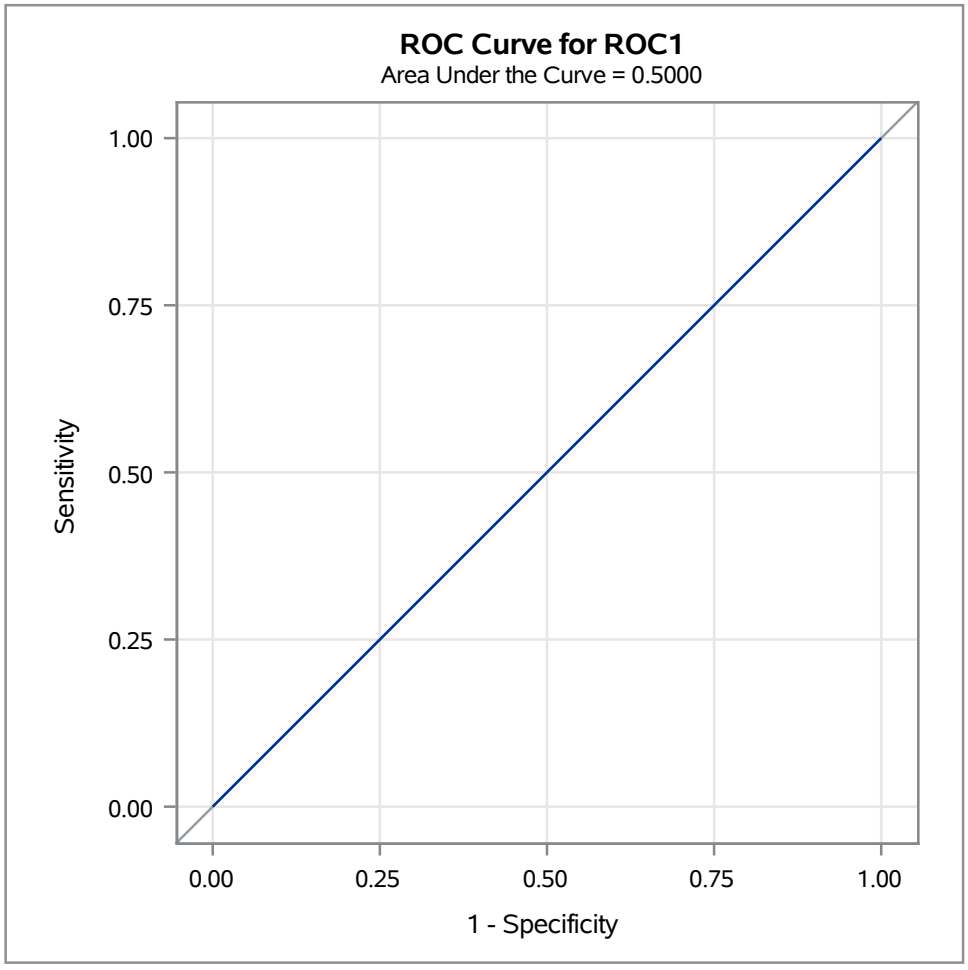
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

-2 Log L	=	4668.717

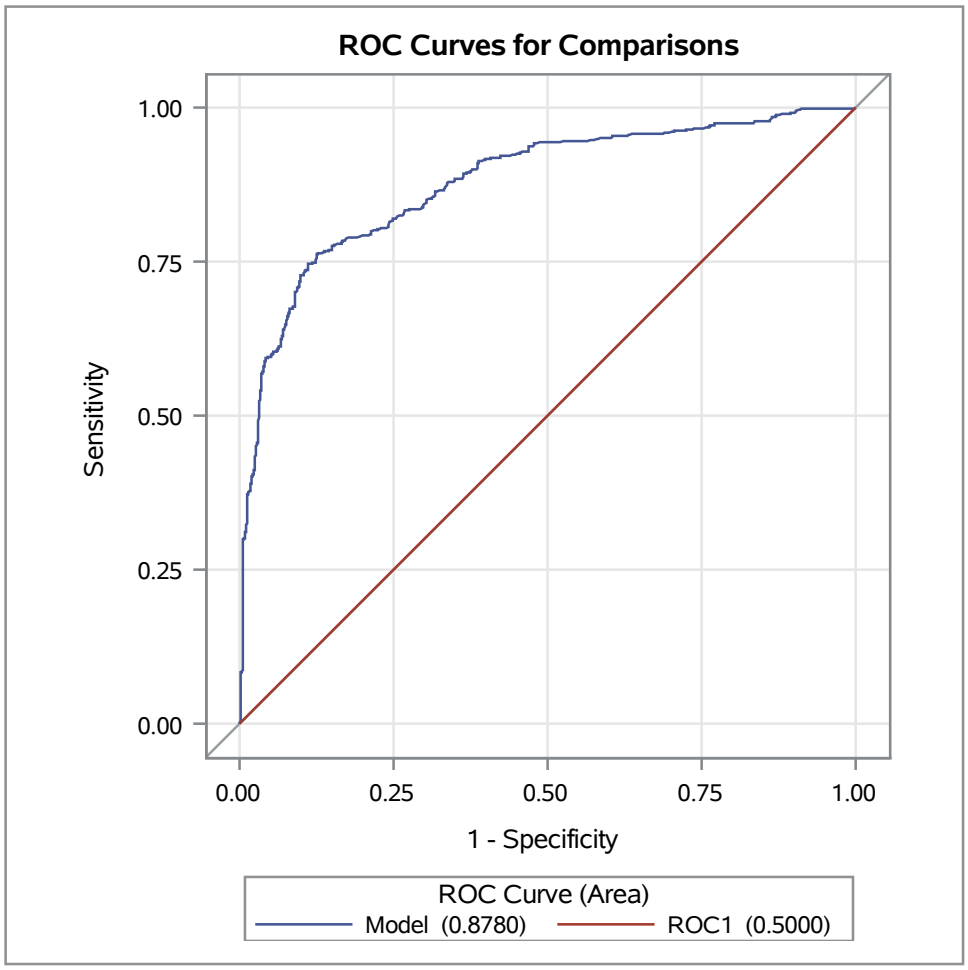
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-0.4809	0.0347	191.6027	<.0001

The LOGISTIC Procedure

ROC Model: ROC1



The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Model	0.8780	0.0102	0.8581	0.8980	0.7561	0.7563	0.3782
ROC1	0.5000	0	0.5000	0.5000	0	.	0

ROC Contrast Test Results			
Contrast	DF	Chi-Square	Pr > ChiSq
Reference = Model	1	1378.7261	<.0001

The LOGISTIC Procedure

Model Information	
Data Set	WORK.TRAINING
Response Variable	HOSPITAL
Number of Response Levels	2
Weight Variable	WEIGHT
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1155
Number of Observations Used	1155
Sum of Weights Read	3510
Sum of Weights Used	3510

Response Profile			
Ordered Value	**HOSPITAL**	**Total Frequency**	**Total Weight**
1	0	567	2169.0000
2	1	588	1341.0000

Probability modeled is HOSPITAL='1'.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	4670.717	3330.289
SC	4675.769	3375.756
-2 Log L	4668.717	3312.289

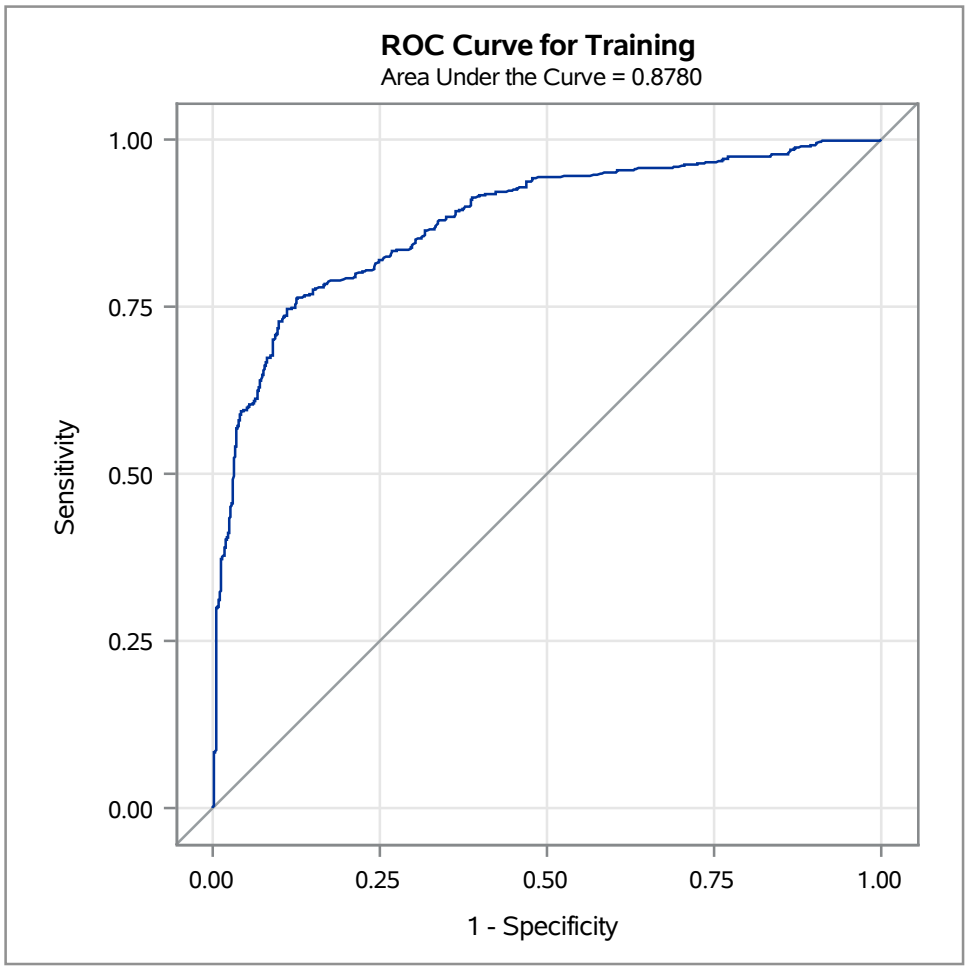
Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	1356.4278	8	<.0001
Score	1147.9990	8	<.0001
Wald	685.2433	8	<.0001

The LOGISTIC Procedure

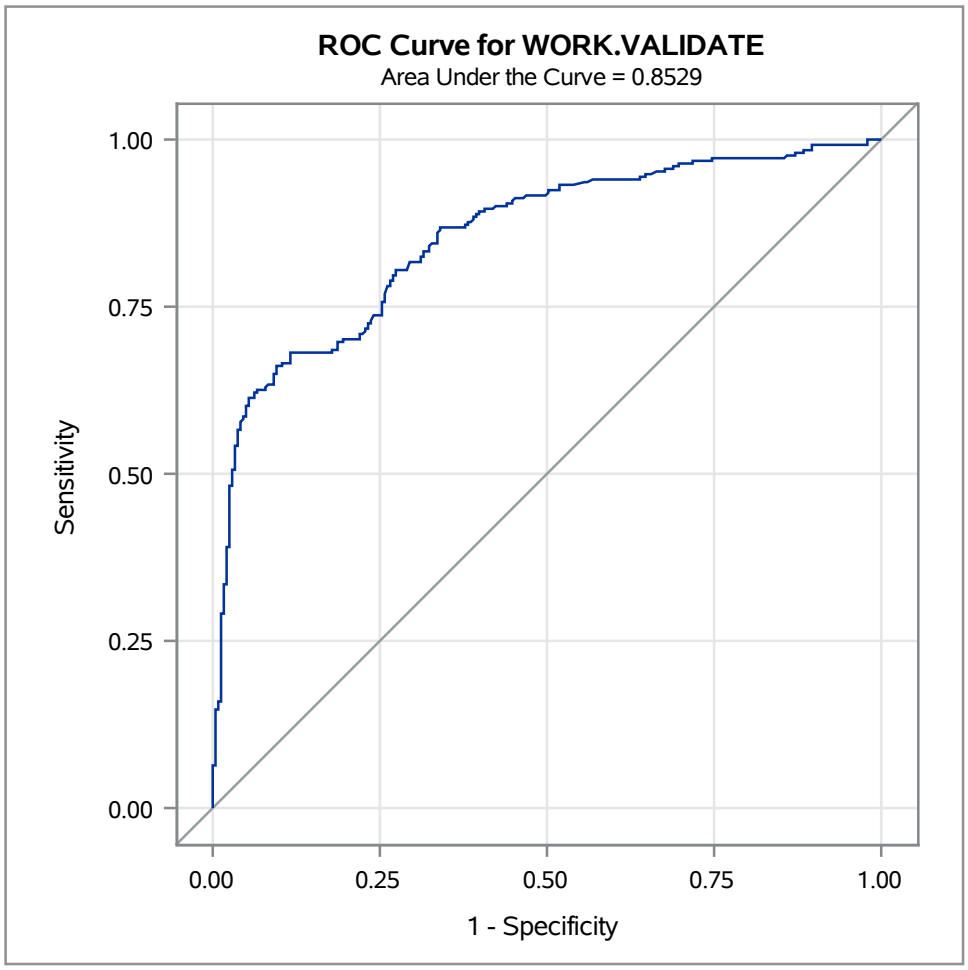
Analysis of Maximum Likelihood Estimates					
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	-1.1101	0.1331	69.5132	<.0001
UND	1	-1.0933	0.1128	93.9653	<.0001
DISLTC8	1	2.0516	0.2517	66.4630	<.0001
DIABETES	1	0.8131	0.1074	57.3384	<.0001
RENAL	1	1.2007	0.1559	59.3029	<.0001
SST	1	-0.7378	0.0919	64.4613	<.0001
mrsafinal	1	0.8302	0.0919	81.6576	<.0001
newage	1	0.00818	0.00212	14.8212	0.0001
BSI	1	2.7088	0.2573	110.8282	<.0001

Odds Ratio Estimates			
Effect	**Point Estimate**	**95% Wald Confidence Limits**	
UND	0.335	0.269	0.418
DISLTC8	7.780	4.751	12.741
DIABETES	2.255	1.827	2.783
RENAL	3.322	2.448	4.510
SST	0.478	0.399	0.573
mrsafinal	2.294	1.916	2.746
newage	1.008	1.004	1.012
BSI	15.012	9.066	24.857

The LOGISTIC Procedure



The LOGISTIC Procedure



ROC Model: ROC1

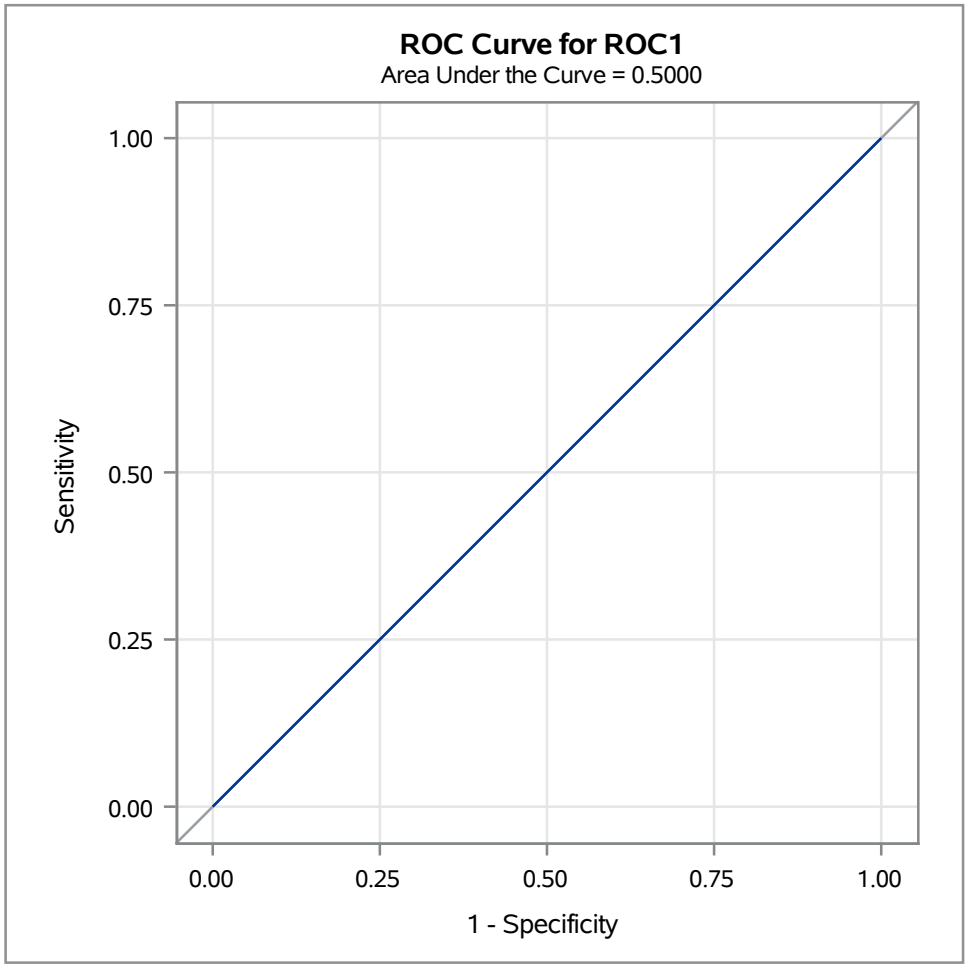
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

-2 Log L	=	4668.717

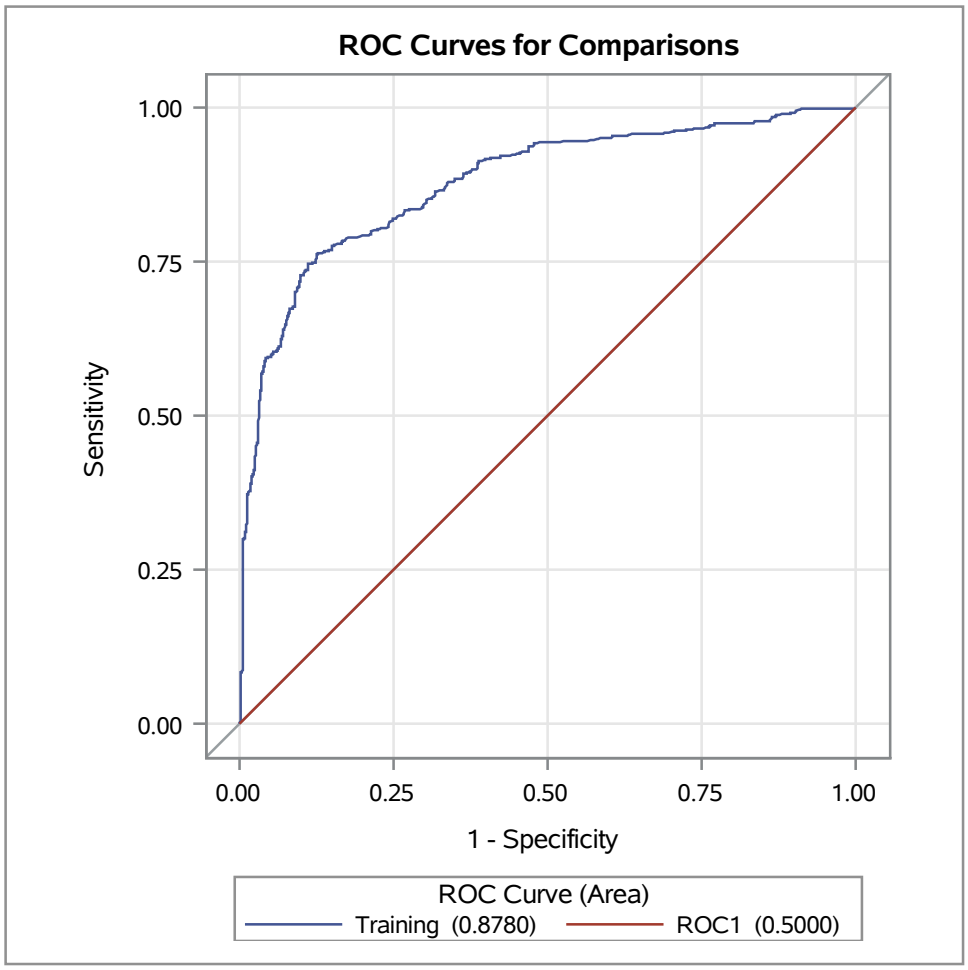
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-0.4809	0.0347	191.6027	<.0001

The LOGISTIC Procedure

ROC Model: ROC1



The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Training	0.8780	0.0102	0.8581	0.8980	0.7561	0.7563	0.3782
ROC1	0.5000	0	0.5000	0.5000	0	.	0

ROC Contrast Test Results			
Contrast	DF	Chi-Square	Pr > ChiSq
Reference = Training	1	1378.7261	<.0001

Selecting the Best Model using Honest Assessment

The HPGENSELECT Procedure

Performance Information	
Execution Mode	Single-Machine
Number of Threads	2

Data Access Information			
Data	**Engine**	**Role**	**Path**
WORK.SAMPLE	V9	Input	On Client
WORK.PRED	V9	Output	On Client

Selecting the Best Model using Honest Assessment

The HPGENSELECT Procedure

CACASE=0

Model Information	
Data Source	WORK.SAMPLE
Response Variable	HOSPITAL
Weight Variable	WEIGHT
Class Parameterization	GLM
Distribution	Binary
Link Function	Logit
Optimization Technique	Nesterov

Selection Information	
Selection Method	LASSO
Stop Criterion	None
Choose Criterion	Validation ASE
Effect Hierarchy Enforced	None

Number of Observations			
Description	**Total**	**Training**	**Validation**
Number of Observations Read	794	557	237
Number of Observations Used	794	557	237

Response Profile				
Ordered Value	**HOSPITAL**	**Total Frequency**	**Training**	**Validation**
1	0	208	537	238
2	1	586	917	374

You are modeling the probability that HOSPITAL='1'.

Class Level Information		
Class	**Levels**	**Values**
UND	2	1 0
DISLTC8	2	1 0
DIABETES	2	1 0
RENAL	2	1 0
SST	2	1 0
mrsafinal	2	1 0
BSI	2	1 0

Selecting the Best Model using Honest Assessment

The HPGENSELECT Procedure

CACASE=0

Selection Details											
Step	**Description**	**Effects In Model**	**Lambda**	**AIC**	**AICC**	**BIC**	**ASE**	**Validation AIC**	**Validation AICC**	**Validation BIC**	**Validation ASE**
0	Initial Model	1	1	1917.197	1917.204	1921.520	0.233	820.935	820.952	824.403	0.238
1	newage entered	2	0.8	1916.144	1916.165	1924.789	0.232	822.841	822.892	829.777	0.238
2		2	0.64	1913.508	1913.529	1922.153	0.232	822.770	822.821	829.706	0.238
3		2	0.512	1911.107	1911.128	1919.752	0.232	822.674	822.726	829.610	0.238
4		2	0.4096	1908.842	1908.864	1917.487	0.231	822.536	822.588	829.472	0.238
5		2	0.3277	1906.665	1906.686	1915.310	0.231	822.355	822.406	829.291	0.238
6		2	0.2621	1904.554	1904.575	1913.199	0.231	822.136	822.187	829.072	0.238
7		2	0.2097	1902.504	1902.526	1911.149	0.230	821.890	821.942	828.826	0.238
8		2	0.1678	1900.517	1900.539	1909.162	0.230	821.628	821.679	828.564	0.237
9		2	0.1342	1898.598	1898.619	1907.243	0.230	821.358	821.410	828.294	0.237
10		2	0.1074	1896.751	1896.773	1905.396	0.229	821.090	821.141	828.026	0.237
11		2	0.0859	1894.982	1895.004	1903.627	0.229	820.829	820.880	827.765	0.237
12		2	0.0687	1893.294	1893.315	1901.939	0.229	820.581	820.632	827.517	0.237
13		2	0.055	1891.688	1891.710	1900.333	0.228	820.350	820.401	827.286	0.237
14		2	0.044	1890.158	1890.180	1898.803	0.228	820.136	820.187	827.072	0.237
15		2	0.0352	1888.712	1888.733	1897.357	0.228	819.943	819.994	826.879	0.237
16	BSI entered	3	0.0281	1888.972	1889.045	1906.262	0.227	822.875	823.047	836.747	0.236
17	UND entered	8	0.0225	1893.776	1894.550	1954.291	0.225	837.822	839.714	886.375	0.234
	DISLTC8 entered	8	0.0225	1893.776	1894.550	1954.291	0.225	837.822	839.714	886.375	0.234
	DIABETES entered	8	0.0225	1893.776	1894.550	1954.291	0.225	837.822	839.714	886.375	0.234
	RENAL entered	8	0.0225	1893.776	1894.550	1954.291	0.225	837.822	839.714	886.375	0.234
	mrsafinal entered	8	0.0225	1893.776	1894.550	1954.291	0.225	837.822	839.714	886.375	0.234
18		8	0.018	1867.880	1868.655	1928.396	0.221	828.627	830.518	877.179	0.231
19		8	0.0144	1837.579	1838.354	1898.095	0.216	817.718	819.610	866.271	0.227
20		8	0.0115	1806.241	1807.016	1866.757	0.211	806.375	808.267	854.928	0.223*

*** Optimal Value of Criterion**

Maximum Regularization Parameter	4.912624
Chosen Regularization Parameter	0.056639

Selecting the Best Model using Honest Assessment

The HPGENSELECT Procedure

Selected Model

CACASE=0

Selected Effects:	Intercept UND DISLTC8 DIABETES RENAL mrsafinal newage BSI

Dimensions	
Number of Effects	8
Number of Parameters	14
Columns in X	14

Fit Statistics		
	Training	**Validation**
-2 Log Likelihood	1778.24	778.38
AIC (smaller is better)	1806.24	806.38
AICC (smaller is better)	1807.02	808.27
BIC (smaller is better)	1866.76	854.93
Pearson Chi-Square	1353.02	596.07
Pearson Chi-Square/DF	2.4918	2.6972
Average Square Error	0.2111	0.2227

Parameter Estimates		
Parameter	**DF**	**Estimate**
Intercept	1	0.133321
UND 1	1	-0.053741
UND 0	1	0.041276
DISLTC8 1	1	0.032164
DISLTC8 0	1	-0.042794
DIABETES 1	1	0.051804
DIABETES 0	1	-0.068195
RENAL 1	1	0.060869
RENAL 0	1	-0.079084
mrsafinal 1	1	0.057472
mrsafinal 0	1	-0.074550
newage	1	0.012053
BSI 1	1	0.095228
BSI 0	1	-0.120818

Selecting the Best Model using Honest Assessment

The HPGENSELECT Procedure

CACASE=1

Model Information	
Data Source	WORK.SAMPLE
Response Variable	HOSPITAL
Weight Variable	WEIGHT
Class Parameterization	GLM
Distribution	Binary
Link Function	Logit
Optimization Technique	Nesterov

Selection Information	
Selection Method	LASSO
Stop Criterion	None
Choose Criterion	Validation ASE
Effect Hierarchy Enforced	None

Number of Observations			
Description	**Total**	**Training**	**Validation**
Number of Observations Read	853	598	255
Number of Observations Used	853	598	255

Response Profile				
Ordered Value	**HOSPITAL**	**Total Frequency**	**Training**	**Validation**
1	0	600	1632	693
2	1	253	424	186

You are modeling the probability that HOSPITAL='1'.

Class Level Information		
Class	**Levels**	**Values**
UND	2	1 0
DISLTC8	2	1 0
DIABETES	2	1 0
RENAL	2	1 0
SST	2	1 0
mrsafinal	2	1 0
BSI	2	1 0

Selecting the Best Model using Honest Assessment

The HPGENSELECT Procedure

CACASE=1

Selection Details											
Step	**Description**	**Effects In Model**	**Lambda**	**AIC**	**AICC**	**BIC**	**ASE**	**Validation AIC**	**Validation AICC**	**Validation BIC**	**Validation ASE**
0	Initial Model	1	1	2094.650	2094.656	2099.043	0.164	909.413	909.429	912.954	0.167
1	newage entered	2	0.8	2091.491	2091.511	2100.278	0.163	909.182	909.230	916.264	0.166
2		2	0.64	2087.349	2087.369	2096.136	0.163	907.457	907.504	914.539	0.166
3		2	0.512	2083.808	2083.828	2092.595	0.163	906.042	906.090	913.125	0.166
4		2	0.4096	2080.652	2080.672	2089.439	0.162	904.832	904.879	911.914	0.166
5		2	0.3277	2077.770	2077.790	2086.558	0.162	903.767	903.815	910.850	0.165
6		2	0.2621	2075.108	2075.128	2083.895	0.162	902.816	902.864	909.898	0.165
7		2	0.2097	2072.637	2072.658	2081.425	0.162	901.960	902.008	909.043	0.165
8		2	0.1678	2070.345	2070.365	2079.132	0.162	901.189	901.237	908.272	0.165
9		2	0.1342	2068.223	2068.243	2077.010	0.161	900.495	900.542	907.577	0.165
10		2	0.1074	2066.265	2066.285	2075.052	0.161	899.871	899.919	906.954	0.165
11		2	0.0859	2062.857	2062.877	2071.644	0.161	898.834	898.881	905.916	0.165
12		2	0.0687	2060.033	2060.053	2068.820	0.161	898.021	898.068	905.103	0.164
13		2	0.055	2057.697	2057.717	2066.484	0.161	897.390	897.438	904.472	0.164
14		2	0.044	2055.767	2055.787	2064.554	0.160	896.907	896.955	903.989	0.164
15		2	0.0352	2054.174	2054.194	2062.961	0.160	896.543	896.590	903.625	0.164
16	UND entered	4	0.0281	2052.191	2052.333	2078.552	0.160	901.142	901.481	922.390	0.164
	BSI entered	4	0.0281	2052.191	2052.333	2078.552	0.160	901.142	901.481	922.390	0.164
17	DIABETES entered	5	0.0225	2043.048	2043.292	2078.196	0.158	900.297	900.883	928.628	0.163
18	mrsafinal entered	6	0.018	2026.302	2026.676	2070.238	0.157	896.593	897.495	932.006	0.161
19	DISLTC8 entered	7	0.0144	2004.149	2004.683	2056.872	0.154	891.008	892.298	933.504	0.159
20		7	0.0115	1974.349	1974.882	2027.072	0.152	880.283	881.572	922.778	0.157*

*** Optimal Value of Criterion**

Maximum Regularization Parameter	4.852855
Chosen Regularization Parameter	0.05595

Selecting the Best Model using Honest Assessment

The HPGENSELECT Procedure

Selected Model

CACASE=1

Selected Effects:	Intercept UND DISLTC8 DIABETES mrsafinal newage BSI

Dimensions	
Number of Effects	7
Number of Parameters	12
Columns in X	12

Fit Statistics		
	Training	**Validation**
-2 Log Likelihood	1950.35	856.28
AIC (smaller is better)	1974.35	880.28
AICC (smaller is better)	1974.88	881.57
BIC (smaller is better)	2027.07	922.78
Pearson Chi-Square	1845.09	830.26
Pearson Chi-Square/DF	3.1486	3.4739
Average Square Error	0.1519	0.1573

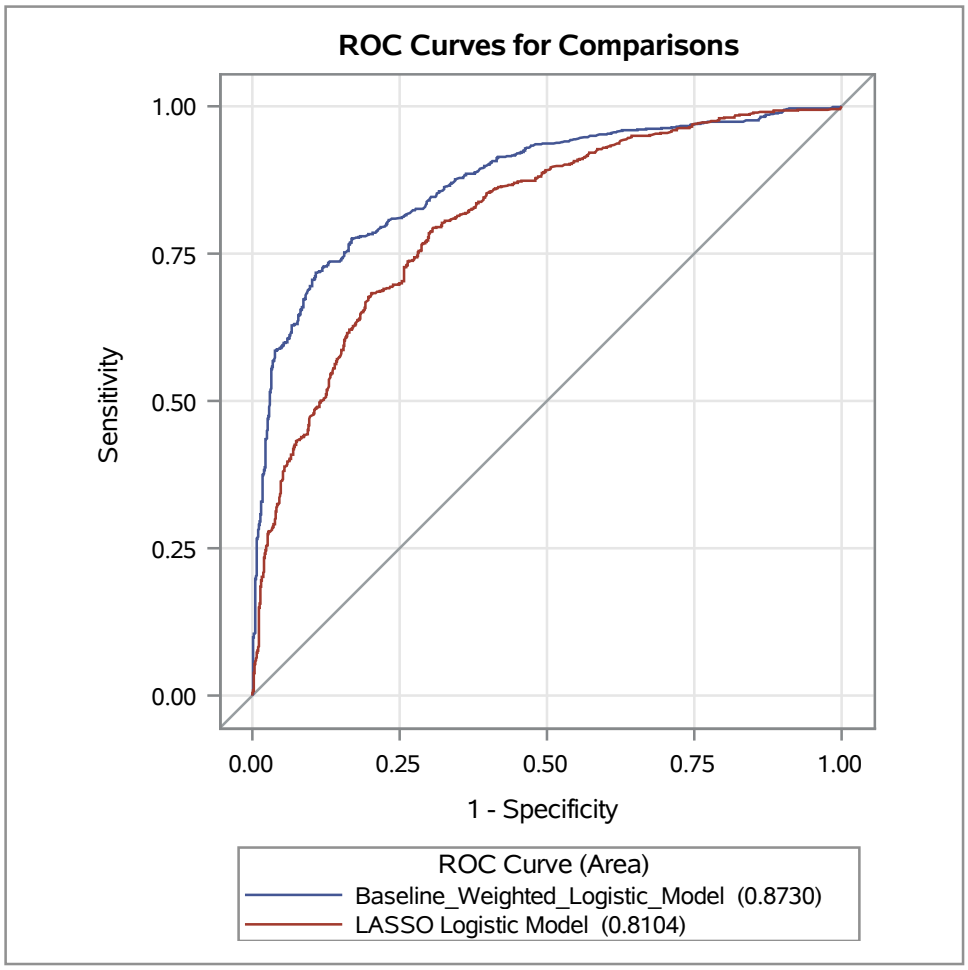
Parameter Estimates		
Parameter	**DF**	**Estimate**
Intercept	1	-1.818762
UND 1	1	-0.145528
UND 0	1	0.125829
DISLTC8 1	1	0.006658
DISLTC8 0	1	-0.008017
DIABETES 1	1	0.051218
DIABETES 0	1	-0.060262
mrsafinal 1	1	0.024260
mrsafinal 0	1	-0.028861
newage	1	0.014599
BSI 1	1	0.087698
BSI 0	1	-0.101538

Selecting the Best Model using Honest Assessment

The HPGENSELECT Procedure

Procedure Task Timing		
Task	**Seconds**	**Percent**
Reading and Levelizing Data	0.00	0.43%
Candidate model fit	0.00	0.57%
Performing Model Selection	0.34	98.92%
Producing Output Data Set	0.00	0.08%

The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Baseline_Weighted_Logistic_Model	0.8730	0.00867	0.8560	0.8900	0.7459	0.7462	0.3730
LASSO Logistic Model	0.8104	0.0105	0.7899	0.8310	0.6209	0.6211	0.3105

The LOGISTIC Procedure

CACASE=0

Model Information	
Data Set	WORK.PRED
Response Variable	HOSPITAL
Number of Response Levels	2
Weight Variable	WEIGHT
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	794
Number of Observations Used	794
Sum of Weights Read	2066
Sum of Weights Used	2066

Response Profile			
Ordered Value	**HOSPITAL**	**Total Frequency**	**Total Weight**
1	0	208	775.0000
2	1	586	1291.0000

Probability modeled is HOSPITAL='1'.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	2735.835	2193.660
SC	2740.512	2235.753
-2 Log L	2733.835	2175.660

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	558.1751	8	<.0001
Score	452.8053	8	<.0001
Wald	329.0759	8	<.0001

The LOGISTIC Procedure

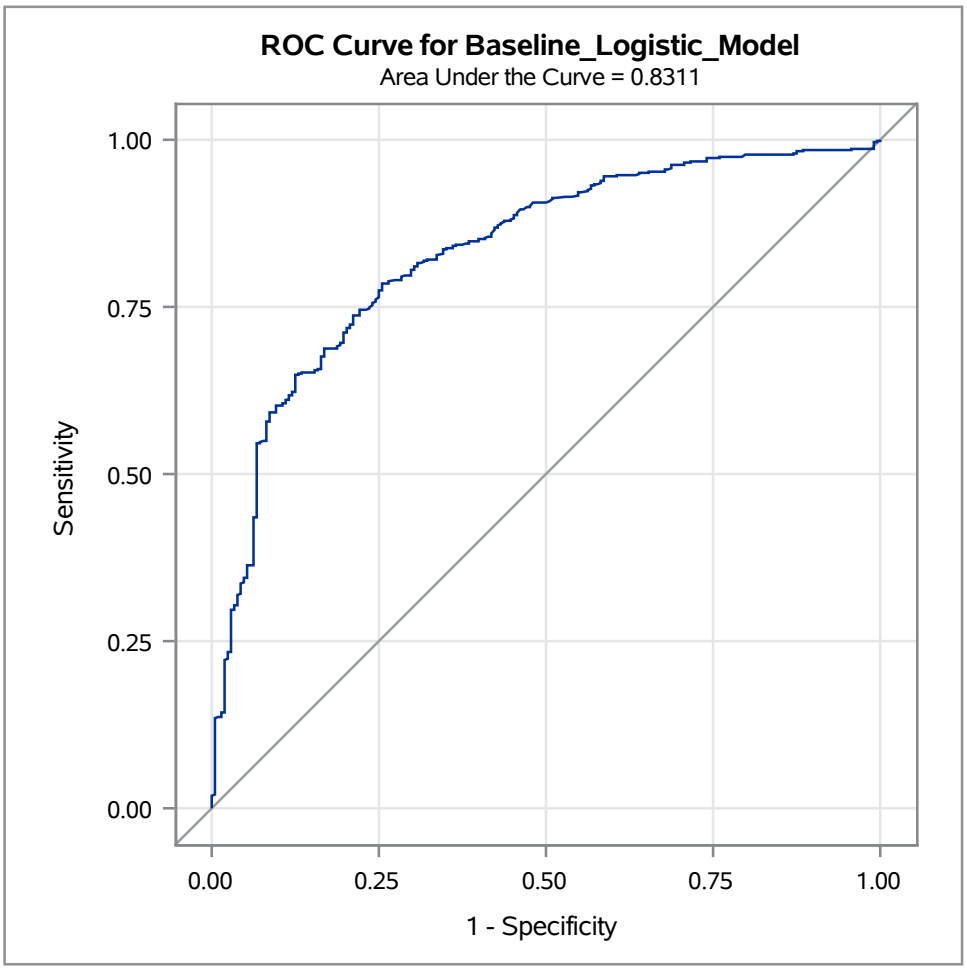
CACASE=0

Analysis of Maximum Likelihood Estimates					
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	0.0450	0.1579	0.0812	0.7757
UND	1	-0.8808	0.1304	45.6112	<.0001
DISLTC8	1	1.8961	0.2667	50.5516	<.0001
DIABETES	1	0.8154	0.1252	42.3977	<.0001
RENAL	1	0.6457	0.1675	14.8667	0.0001
SST	1	-0.3020	0.1104	7.4827	0.0062
mrsafinal	1	0.6834	0.1102	38.4406	<.0001
newage	1	-0.00307	0.00257	1.4254	0.2325
BSI	1	2.1117	0.2645	63.7463	<.0001

Odds Ratio Estimates			
Effect	**Point Estimate**	**95% Wald Confidence Limits**	
UND	0.414	0.321	0.535
DISLTC8	6.660	3.949	11.232
DIABETES	2.260	1.768	2.889
RENAL	1.907	1.374	2.648
SST	0.739	0.595	0.918
mrsafinal	1.981	1.596	2.458
newage	0.997	0.992	1.002
BSI	8.262	4.920	13.874

The LOGISTIC Procedure

CACASE=0



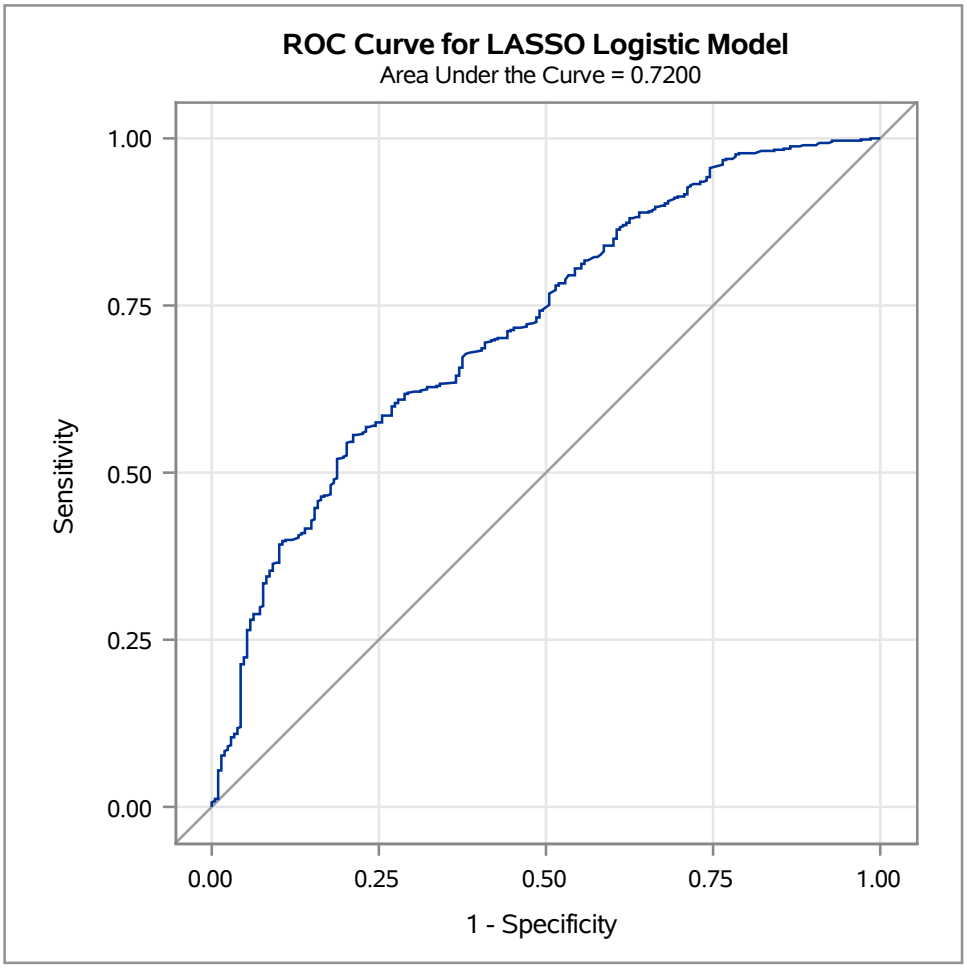
ROC Model: LASSO Logistic Model

ROC Model Information	
ROC Contrast Coefficients	phat

The LOGISTIC Procedure

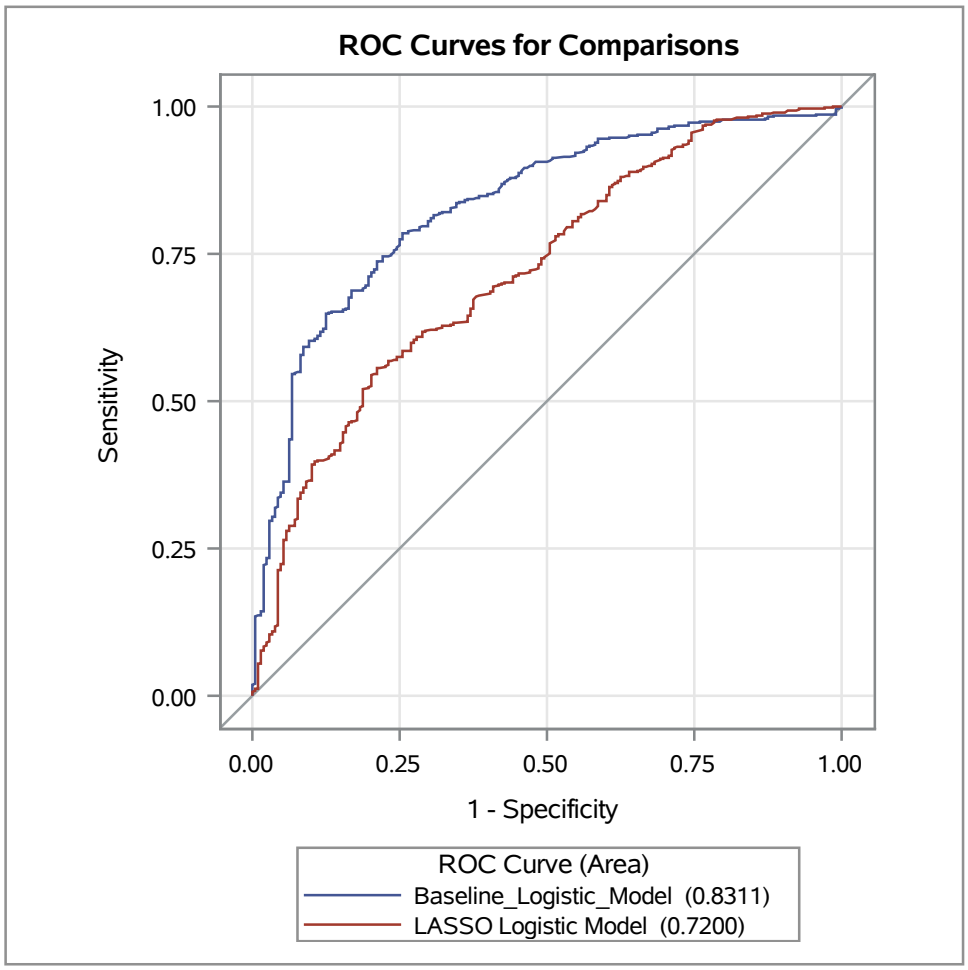
ROC Model: LASSO Logistic Model

CACASE=0



The LOGISTIC Procedure

CACASE=0



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Baseline_Logistic_Model	0.8311	0.0161	0.7994	0.8627	0.6622	0.6625	0.2564
LASSO Logistic Model	0.7200	0.0203	0.6802	0.7597	0.4399	0.4403	0.1703

The LOGISTIC Procedure

CACASE=1

Model Information	
Data Set	WORK.PRED
Response Variable	HOSPITAL
Number of Response Levels	2
Weight Variable	WEIGHT
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	853
Number of Observations Used	853
Sum of Weights Read	2935
Sum of Weights Used	2935

Response Profile			
Ordered Value	**HOSPITAL**	**Total Frequency**	**Total Weight**
1	0	600	2325.0000
2	1	253	610.0000

Probability modeled is HOSPITAL='1'.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	3002.016	2248.671
SC	3006.765	2291.410
-2 Log L	3000.016	2230.671

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	769.3450	8	<.0001
Score	820.2740	8	<.0001
Wald	365.7420	8	<.0001

The LOGISTIC Procedure

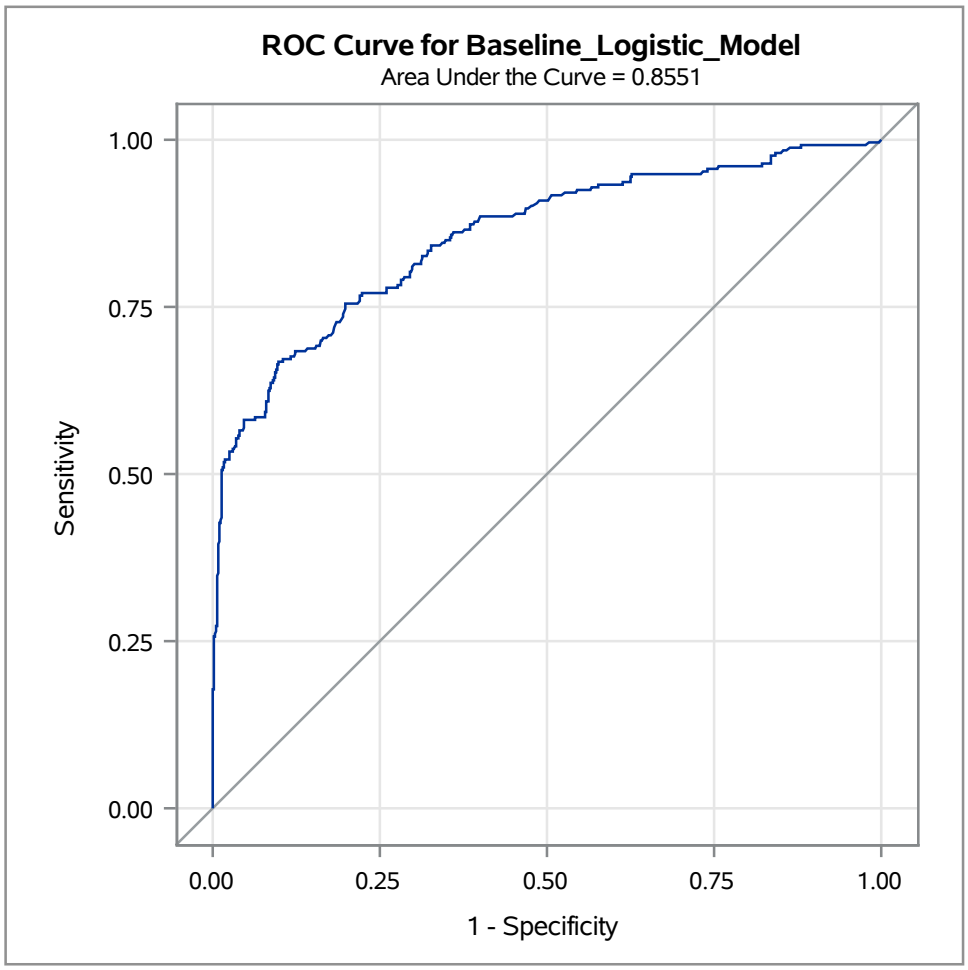
CACASE=1

Analysis of Maximum Likelihood Estimates					
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	-1.7720	0.1739	103.8449	<.0001
UND	1	-1.0551	0.1461	52.1687	<.0001
DISLTC8	1	3.8047	0.5597	46.2168	<.0001
DIABETES	1	1.2291	0.1382	79.1148	<.0001
RENAL	1	0.7382	0.2758	7.1651	0.0074
SST	1	-0.1288	0.1258	1.0474	0.3061
mrsafinal	1	0.5465	0.1192	21.0223	<.0001
newage	1	0.00176	0.00268	0.4329	0.5106
BSI	1	4.0432	0.3828	111.5694	<.0001

Odds Ratio Estimates			
Effect	**Point Estimate**	**95% Wald Confidence Limits**	
UND	0.348	0.261	0.464
DISLTC8	44.914	14.997	134.513
DIABETES	3.418	2.607	4.481
RENAL	2.092	1.219	3.592
SST	0.879	0.687	1.125
mrsafinal	1.727	1.367	2.182
newage	1.002	0.997	1.007
BSI	57.006	26.922	120.711

The LOGISTIC Procedure

CACASE=1



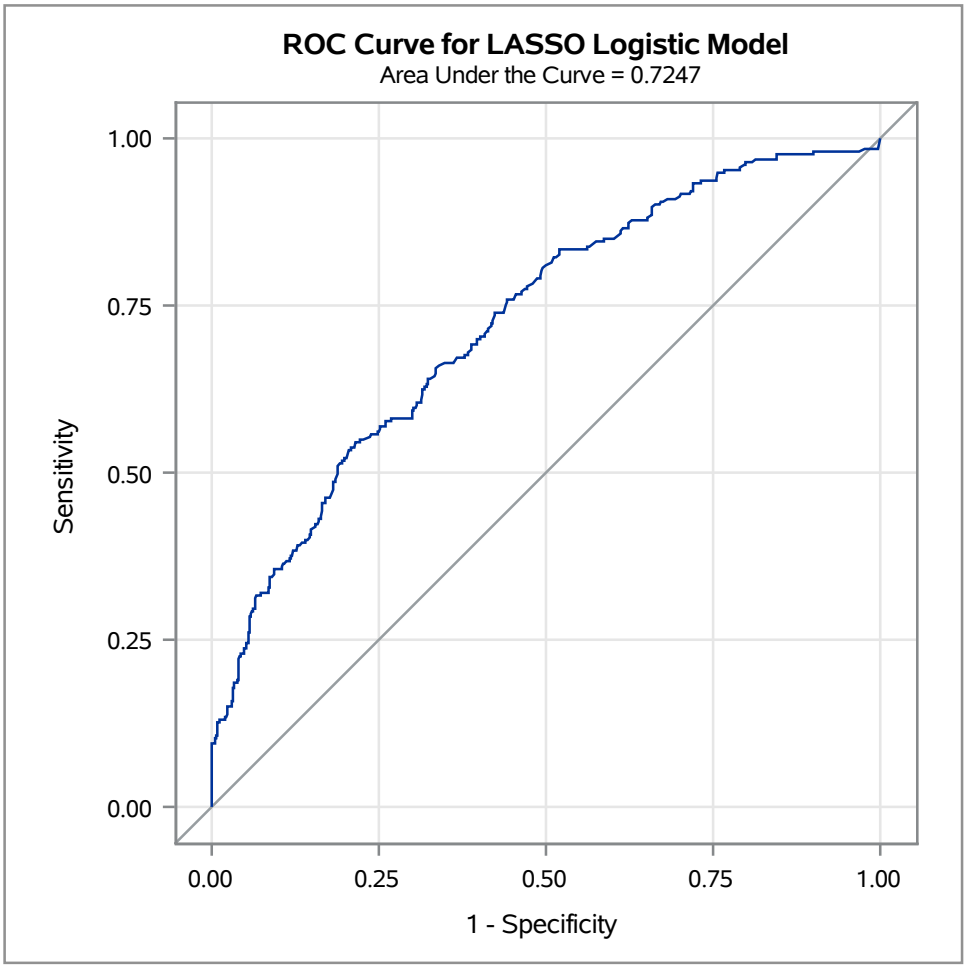
ROC Model: LASSO Logistic Model

ROC Model Information	
ROC Contrast Coefficients	phat

The LOGISTIC Procedure

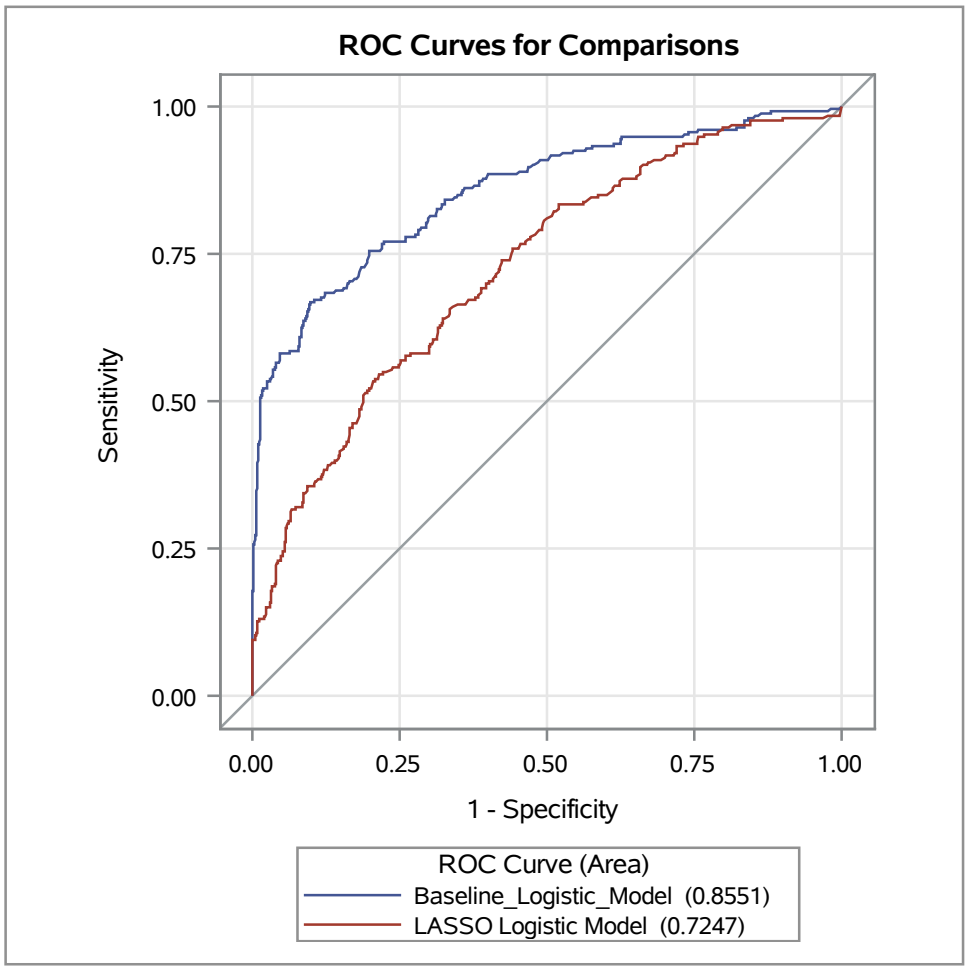
ROC Model: LASSO Logistic Model

CACASE=1



The LOGISTIC Procedure

CACASE=1



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Baseline_Logistic_Model	0.8551	0.0153	0.8251	0.8851	0.7102	0.7106	0.2967
LASSO Logistic Model	0.7247	0.0190	0.6876	0.7619	0.4495	0.4501	0.1878

The SURVEYFREQ Procedure

Data Summary	
Number of Observations	1447
Sum of Weights	4363

Table of hosp by hosp_num						
hosp	hosp_num	Frequency	Weighted Frequency	Std Err of Wgt Freq	Percent	Std Err of Percent
No	0	735	2808	75.19838	64.3594	1.3469
	1	0	.	.	.	.
	Total	735	2808	75.19838	64.3594	1.3469
Yes	0	0	.	.	.	.
	1	712	1555	57.08056	35.6406	1.3469
	Total	712	1555	57.08056	35.6406	1.3469
Total	0	735	2808	75.19838	64.3594	1.3469
	1	712	1555	57.08056	35.6406	1.3469
	Total	1447	4363	53.60645	100.0000	

Table of co					
co	Frequency	Weighted Frequency	Std Err of Wgt Freq	Percent	Std Err of Percent
Community-onset	846	2907	72.90100	66.6285	1.3382
Healthcare-associated	601	1456	58.42348	33.3715	1.3382
Total	1447	4363	53.60645	100.0000	

The FREQ Procedure

hosp	hosp_num	Frequency	Percent	Cumulative Frequency	Cumulative Percent
No	**0**	2808	64.36	2808	64.36
Yes	**1**	1555	35.64	4363	100.00

co	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Community-onset	2907	66.63	2907	66.63
Healthcare-associated	1456	33.37	4363	100.00

The FREQ Procedure

co	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Community-onset	2907	100.00	2907	100.00

The FREQ Procedure

co	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Healthcare-associated	1456	100.00	1456	100.00

SAS Modeling Output
Baseline Weighted Logistic Regression Model

The SURVEYLOGISTIC Procedure

Model Information	
Data Set	WORK.STAPH
Response Variable	hosp
Number of Response Levels	2
Stratum Variable	INVASIVE
Number of Strata	2
Weight Variable	WEIGHT
Model	Binary Logit
Optimization Technique	Newton-Raphson
Variance Adjustment	Degrees of Freedom (DF)

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	1447
Number of Observations Used	1447
Sum of Weights Read	4363
Sum of Weights Used	4363

Response Profile			
Ordered Value	**hosp**	**Total Frequency**	**Total Weight**
1	No	735	2808.0000
2	Yes	712	1555.0000

Probability modeled is hosp='Yes'.

Class Level Information		
Class	**Value**	**Design Variables**
WOUND	**No**	0
	Yes	1
mrsafinal	**MRSA**	1
	MSSA	0
kidney	**No**	0
	Yes	1
DIABETES	**No**	0
	Yes	1

SAS Modeling Output
Baseline Weighted Logistic Regression Model

The SURVEYLOGISTIC Procedure

Class Level Information		
Class	**Value**	**Design Variables**
SMOKER	**No**	0
	Yes	1
BSI	**No**	0
	Yes	1

Stratum Information		
Stratum Index	**INVASIVE**	**N Obs**
1	No	953
2	Yes	494

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	5685.439	4134.144
SC	5691.820	4185.191
-2 Log L	5683.439	4118.144

R-Square	0.3015	**Max-rescaled R-Square**	0.4140

Testing Global Null Hypothesis: BETA=0				
Test	**F Value**	**Num DF**	**Den DF**	**Pr > F**
Likelihood Ratio	74.16	7.0000	10115	<.0001
Score	121.72	7	1439	<.0001
Wald	39.21	7	1439	<.0001
NOTE: Second-order Rao-Scott design correction 0.0000 applied to the Likelihood Ratio test.				

SAS Modeling Output
Baseline Weighted Logistic Regression Model

The SURVEYLOGISTIC Procedure

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
SMOKER	22.54	1	1445	<.0001
mrsafinal	22.41	1	1445	<.0001
kidney	13.38	1	1445	0.0003
DIABETES	35.62	1	1445	<.0001
BSI	158.48	1	1445	<.0001
WOUND	15.02	1	1445	0.0001
newage	9.69	1	1445	0.0019

Analysis of Maximum Likelihood Estimates					
Parameter		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-2.3264	0.1864	-12.48	<.0001
SMOKER	Yes	1.0095	0.2126	4.75	<.0001
mrsafinal	MRSA	0.7667	0.1620	4.73	<.0001
kidney	Yes	1.0379	0.2838	3.66	0.0003
DIABETES	Yes	1.1657	0.1953	5.97	<.0001
BSI	Yes	3.6303	0.2884	12.59	<.0001
WOUND	Yes	0.6579	0.1697	3.88	0.0001
newage		0.0108	0.00346	3.11	0.0019
NOTE: The degrees of freedom for the t tests is 1445.					

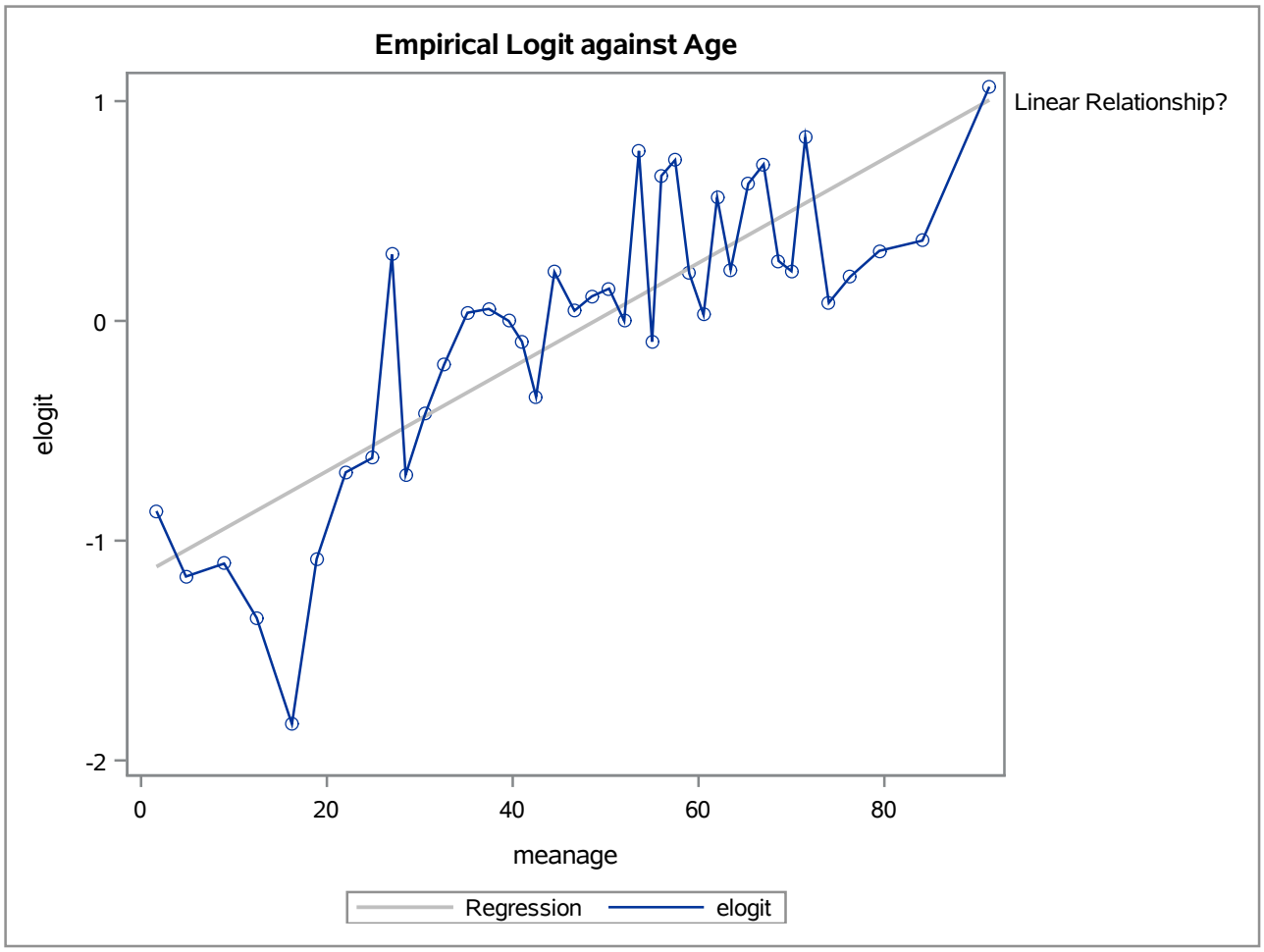
Odds Ratio Estimates			
Effect	Point Estimate	95% Confidence Limits	
SMOKER Yes vs No	2.744	1.808	4.164
mrsafinal MRSA vs MSSA	2.153	1.567	2.958
kidney Yes vs No	2.823	1.618	4.926
DIABETES Yes vs No	3.208	2.187	4.706
BSI Yes vs No	37.725	21.427	66.420
WOUND Yes vs No	1.931	1.384	2.694
newage	1.011	1.004	1.018
NOTE: The degrees of freedom in computing the confidence limits is 1445.			

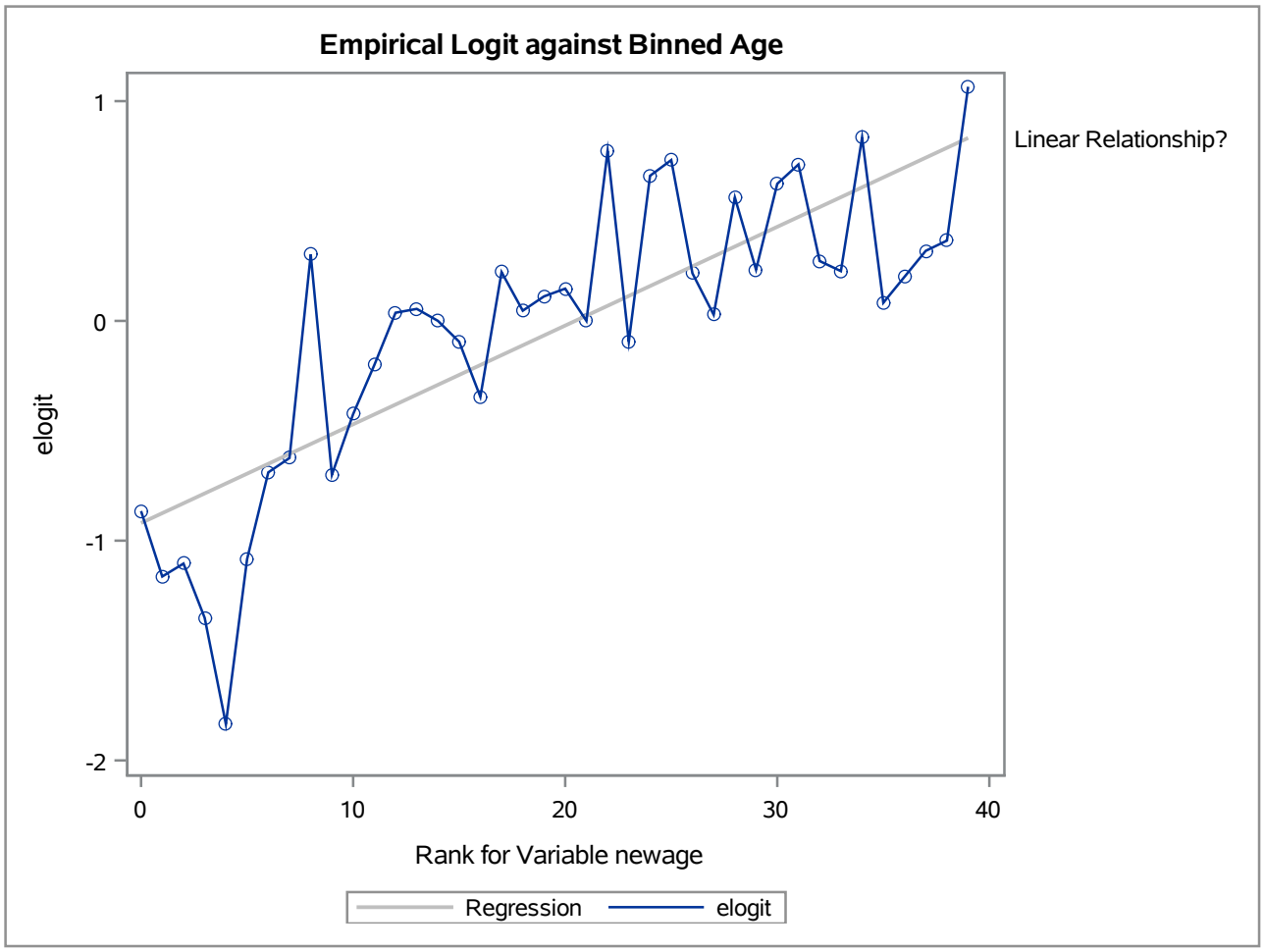
SAS Modeling Output
Baseline Weighted Logistic Regression Model

The SURVEYLOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.4	**Somers' D**	0.731
Percent Discordant	13.4	**Gamma**	0.732
Percent Tied	0.2	**Tau-a**	0.366
Pairs	523320	**c**	0.865

Estimated Correlation Matrix								
Parameter	**Intercept**	**SMOKERYes**	**mrsafinalMRSA**	**kidneyYes**	**DIABETESYes**	**BSIYes**	**WOUNDYes**	**newage**
Intercept	1.0000	-0.1785	-0.3593	0.0276	0.0005	-0.1332	-0.1622	-0.7818
SMOKERYes	-0.1785	1.0000	-0.0766	0.0801	0.0184	0.0226	-0.0322	0.0285
mrsafinalMRSA	-0.3593	-0.0766	1.0000	-0.0583	-0.0496	0.0480	0.0557	0.1120
kidneyYes	0.0276	0.0801	-0.0583	1.0000	-0.1249	-0.0402	0.0667	-0.1625
DIABETESYes	0.0005	0.0184	-0.0496	-0.1249	1.0000	0.1465	-0.0995	-0.1909
BSIYes	-0.1332	0.0226	0.0480	-0.0402	0.1465	1.0000	0.1665	-0.0821
WOUNDYes	-0.1622	-0.0322	0.0557	0.0667	-0.0995	0.1665	1.0000	-0.1344
newage	-0.7818	0.0285	0.1120	-0.1625	-0.1909	-0.0821	-0.1344	1.0000


Empirical Logit against Age
Linear Relationship?
elogit
meanage
1
0
-1
-2
0
20
40
60
80
Regression
elogit


Empirical Logit against Binned Age
1
0
-1
-2
elogit
0
10
20
30
40
Rank for Variable newage
Regression
elogit
Linear Relationship?

The CORR Procedure

2 Variables:	elogit meanage

Simple Statistics						
Variable	**N**	**Mean**	**Std Dev**	**Sum**	**Minimum**	**Maximum**
elogit	40	-0.04369	0.65292	-1.74763	-1.83438	1.06538
meanage	40	47.02262	22.85461	1881	1.65789	91.29730

Pearson Correlation Coefficients, N = 40 Prob > |r| under H0: Rho=0		
	elogit	**meanage**
elogit	1.00000	0.82924 <.0001
meanage	0.82924 <.0001	1.00000

The REG Procedure
Model: MODEL1
Dependent Variable: elogit

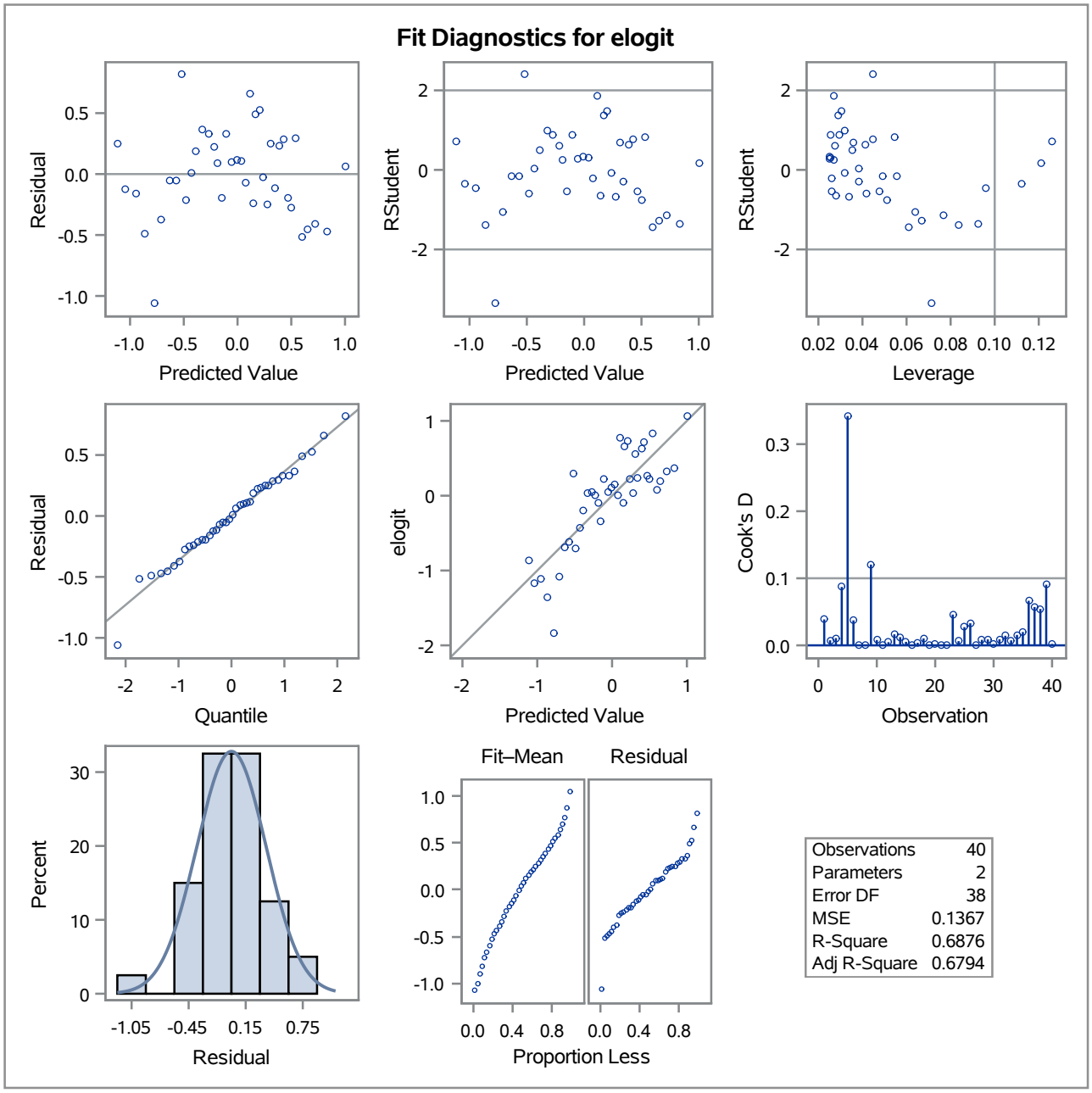
Number of Observations Read	40
Number of Observations Used	40

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	11.43252	11.43252	83.66	<.0001
Error	38	5.19311	0.13666		
Corrected Total	39	16.62563			

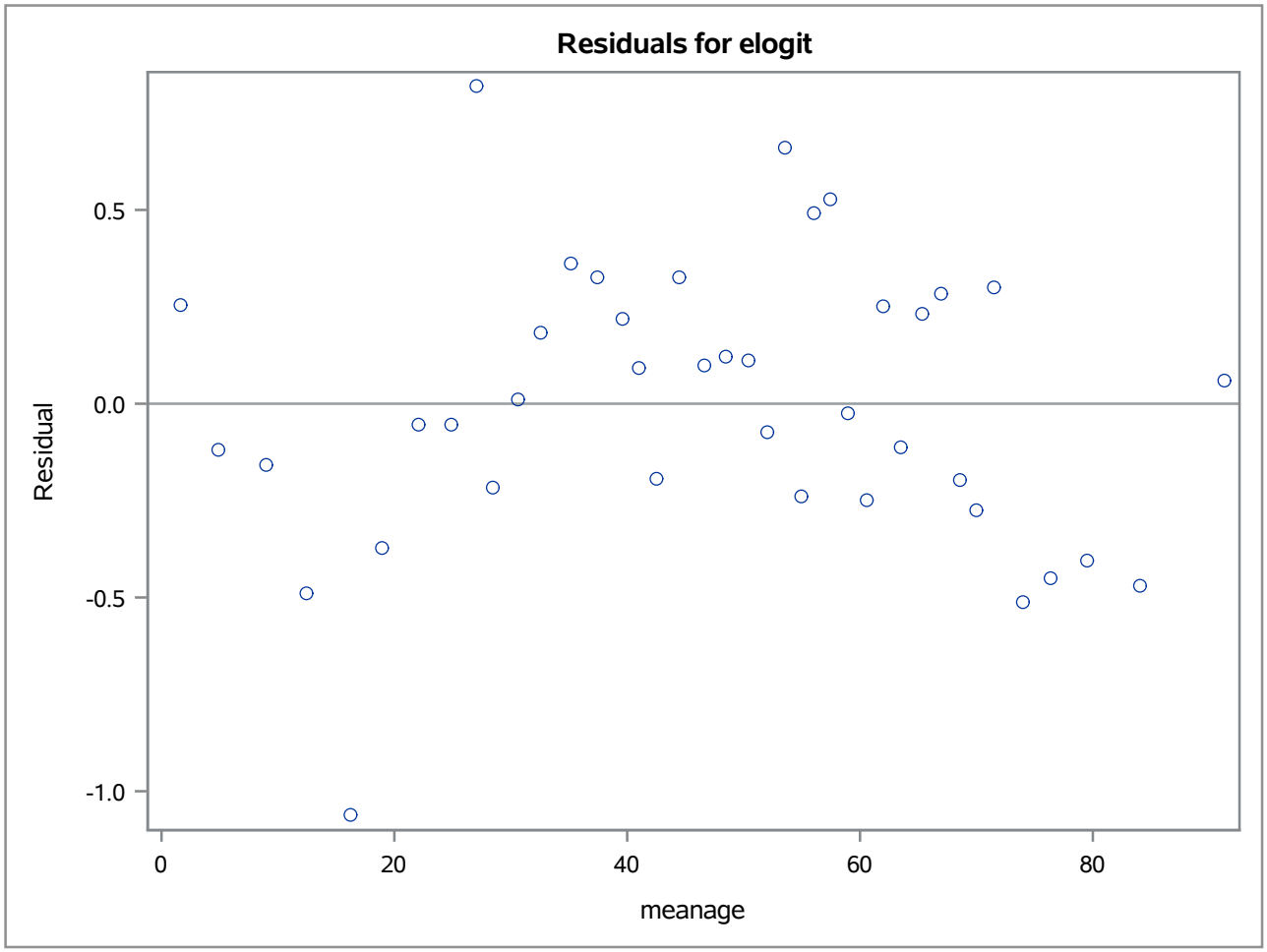
Root MSE	0.36968	R-Square	0.6876
Dependent Mean	-0.04369	Adj R-Sq	0.6794
Coeff Var	-846.12217		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-1.15766	0.13509	-8.57	<.0001
meanage	1	0.02369	0.00259	9.15	<.0001

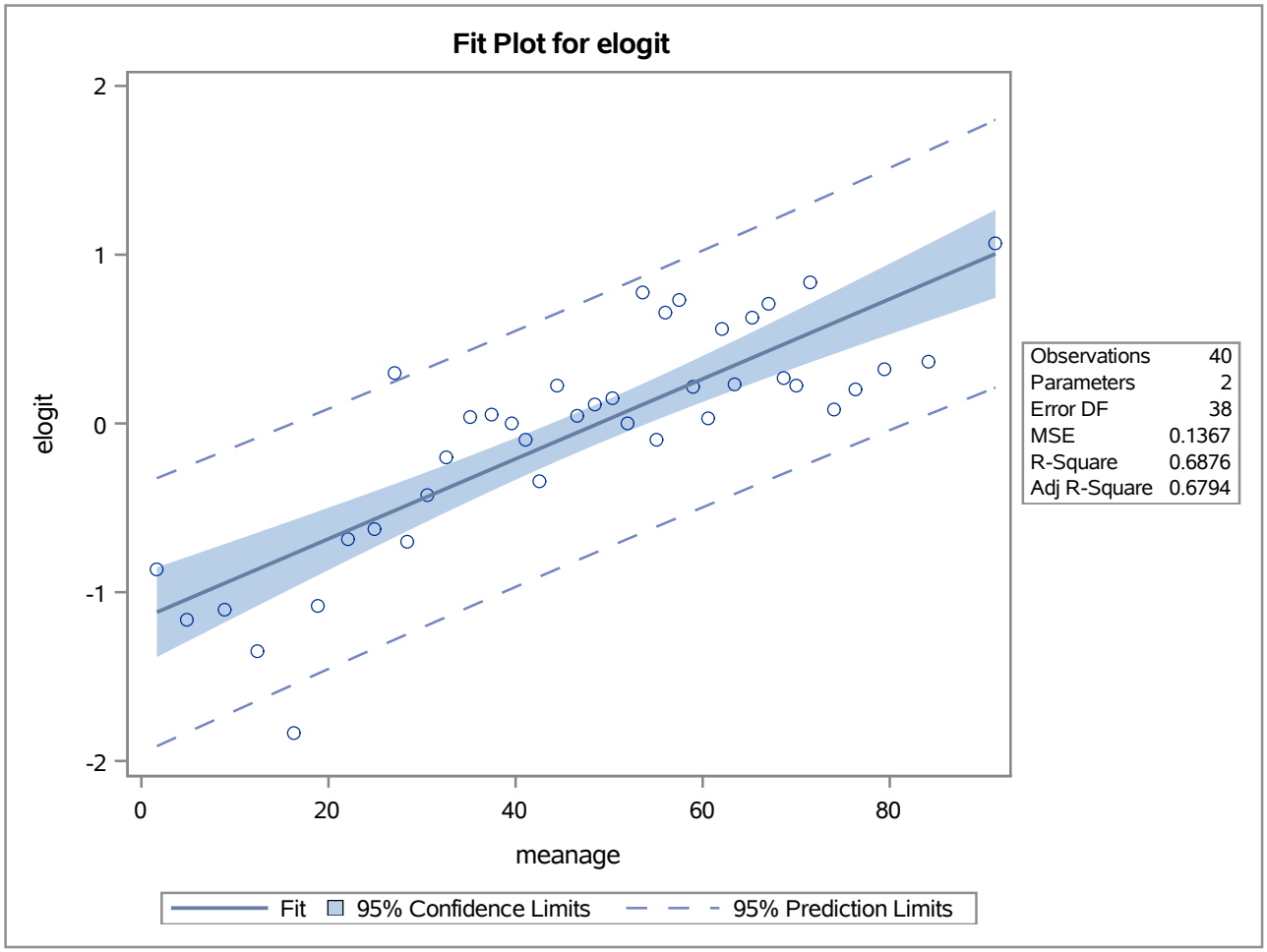
The REG Procedure
Model: MODEL1
Dependent Variable: elogit



The REG Procedure
Model: MODEL1
Dependent Variable: elogit



The REG Procedure
Model: MODEL1
Dependent Variable: elogit



The CORR Procedure

2 Variables:	elogit bin

Simple Statistics							
Variable	**N**	**Mean**	**Std Dev**	**Sum**	**Minimum**	**Maximum**	**Label**
elogit	40	-0.04369	0.65292	-1.74763	-1.83438	1.06538	
bin	40	19.50000	11.69045	780.00000	0	39.00000	Rank for Variable newage

Pearson Correlation Coefficients, N = 40 Prob > |r| under H0: Rho=0		
	elogit	**bin**
elogit	1.00000	0.80448 <.0001
bin **Rank for Variable newage**	0.80448 <.0001	1.00000

The REG Procedure
Model: MODEL1
Dependent Variable: elogit

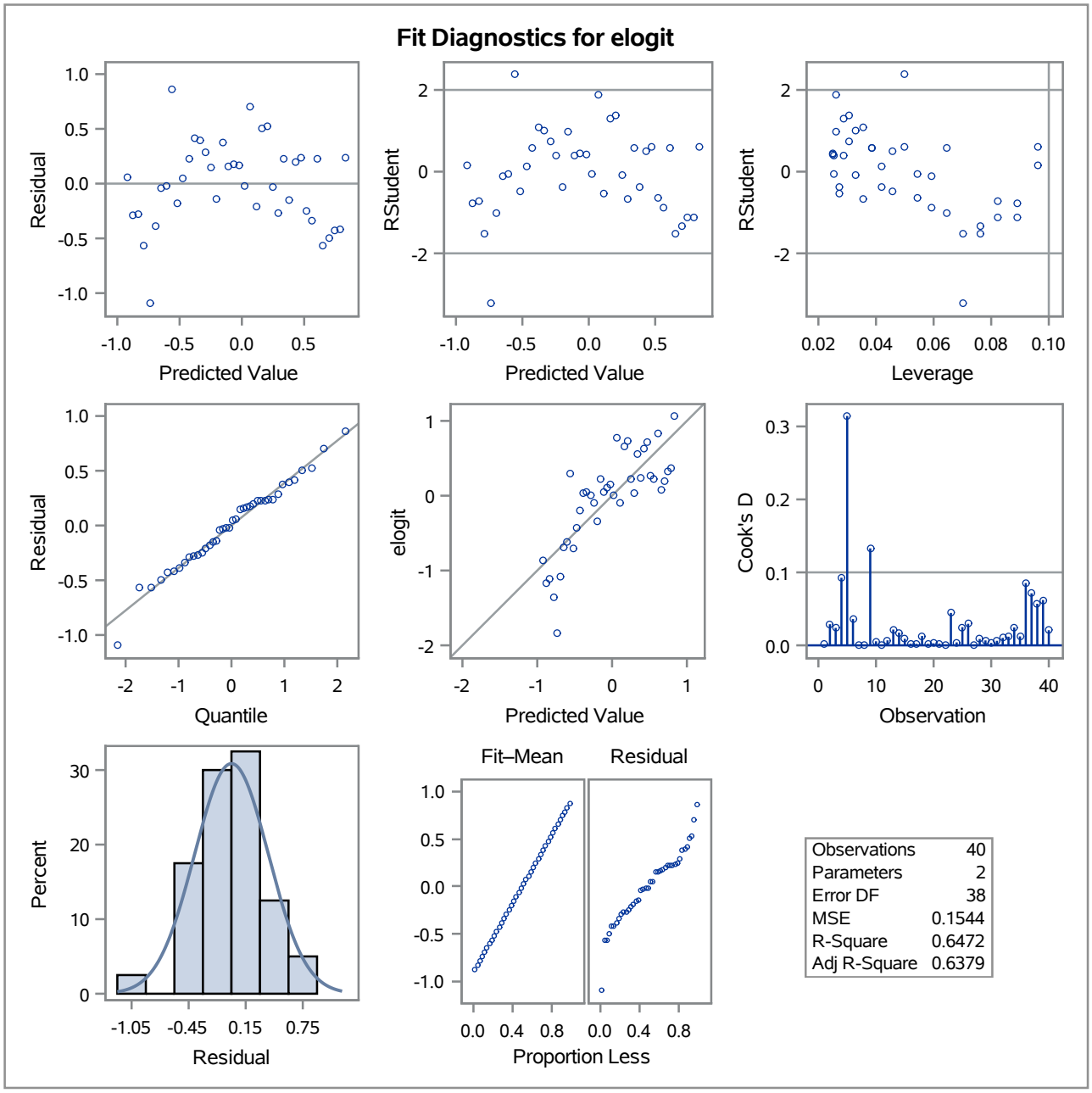
Number of Observations Read	40
Number of Observations Used	40

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	1	10.76003	10.76003	69.71	<.0001
Error	38	5.86560	0.15436		
Corrected Total	39	16.62563			

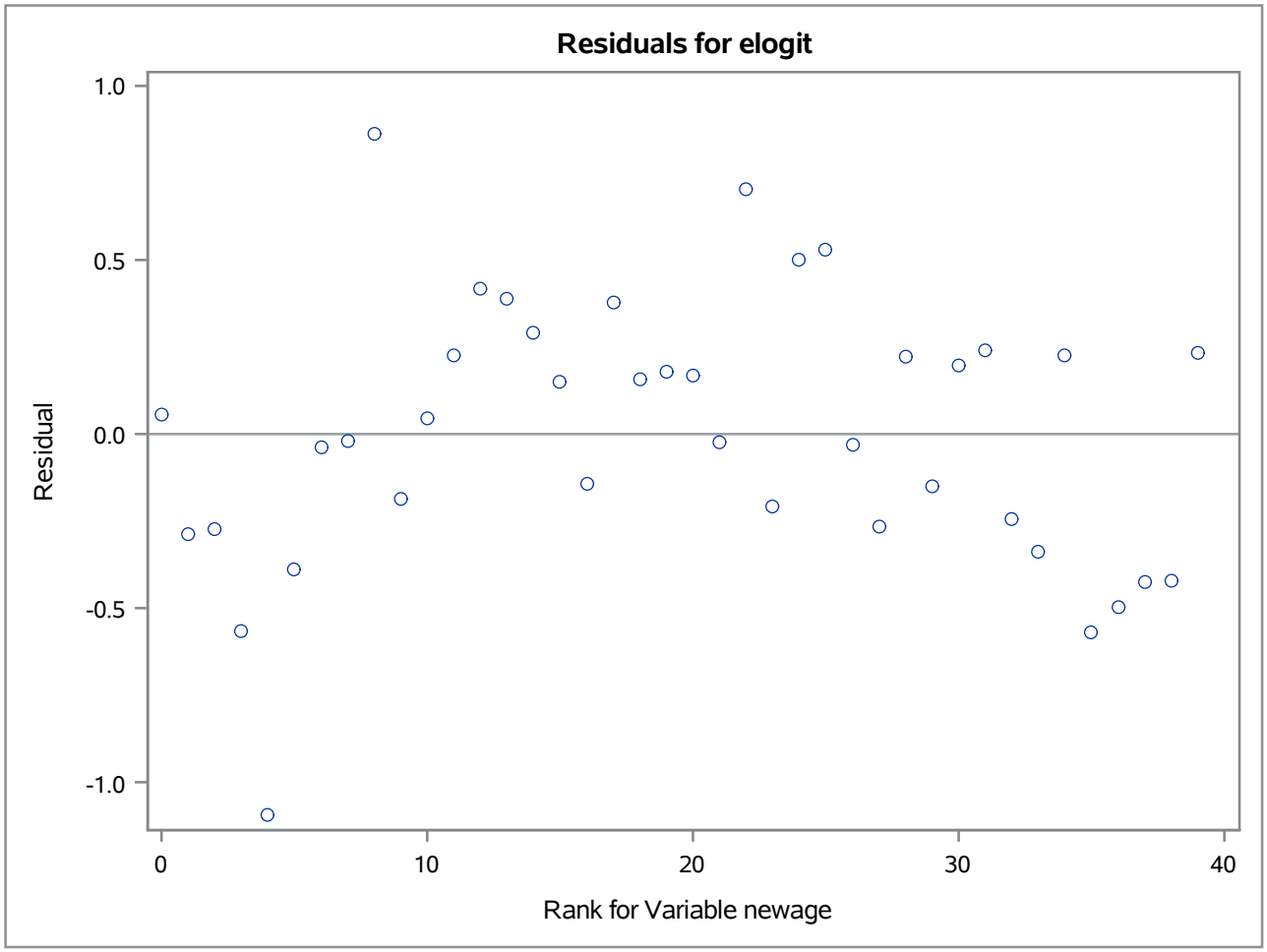
Root MSE	0.39288	**R-Square**	0.6472
Dependent Mean	-0.04369	**Adj R-Sq**	0.6379
Coeff Var	-899.23986		

Parameter Estimates						
Variable	**Label**	**DF**	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept	Intercept	1	-0.91984	0.12195	-7.54	<.0001
bin	Rank for Variable newage	1	0.04493	0.00538	8.35	<.0001

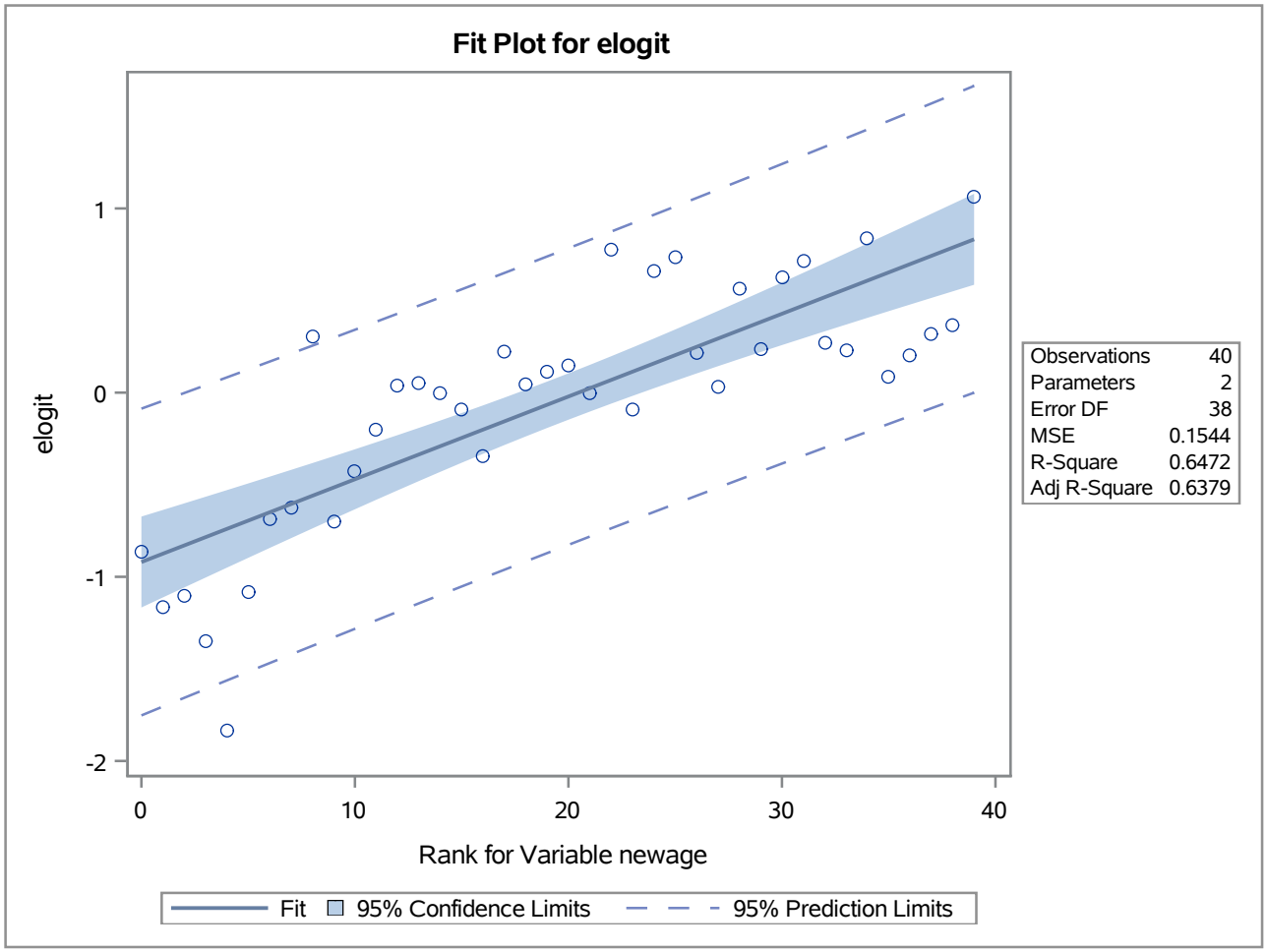
The REG Procedure
Model: MODEL1
Dependent Variable: elogit

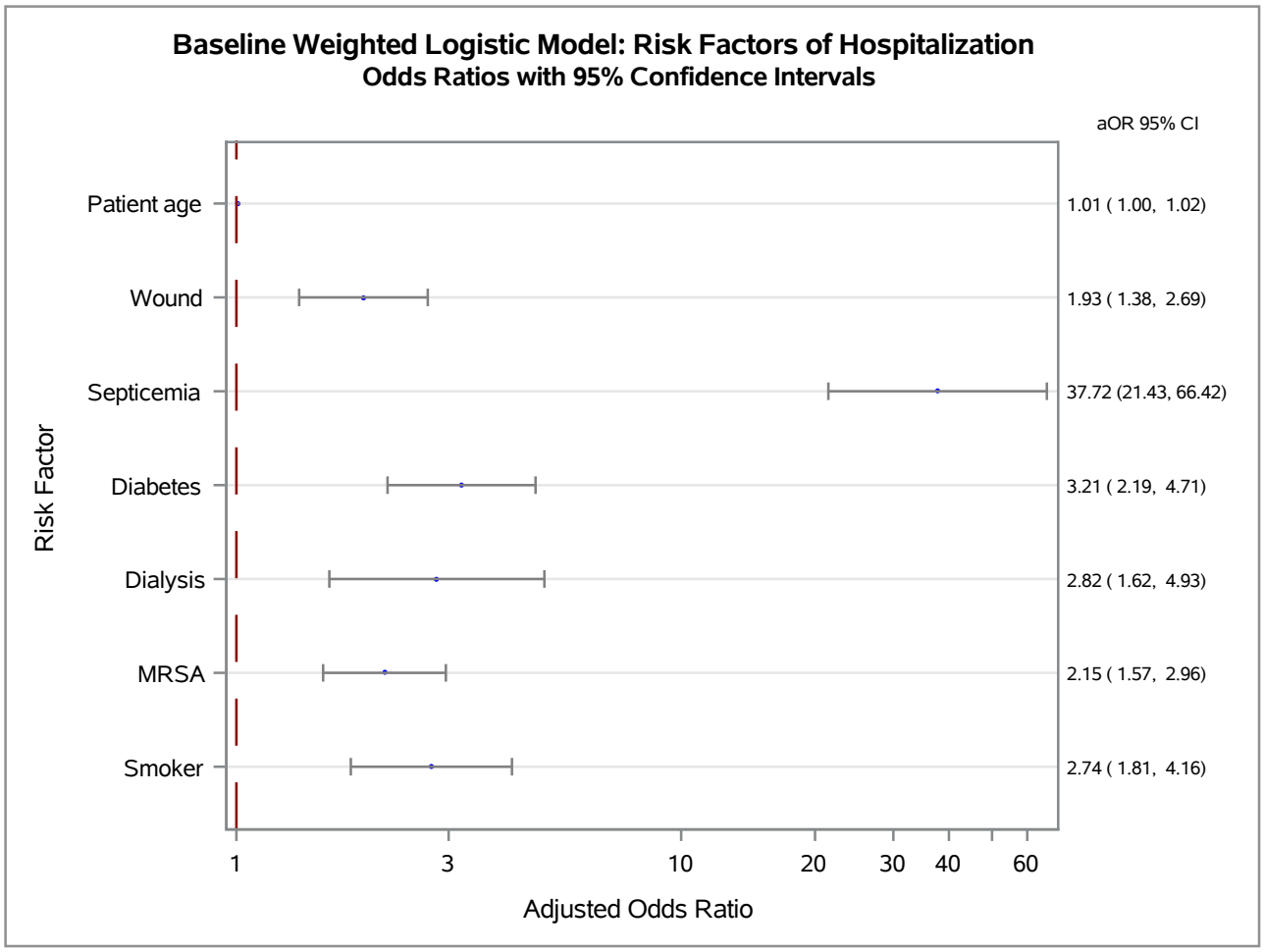


The REG Procedure
Model: MODEL1
Dependent Variable: elogit



The REG Procedure
Model: MODEL1
Dependent Variable: elogit




Baseline Weighted Logistic Model: Risk Factors of Hospitalization
Odds Ratios with 95% Confidence Intervals
aOR 95% CI
Patient age
Wound
Septicemia
Diabetes
Dialysis
MRSA
Smoker
1.01 (1.00, 1.02)
1.93 (1.38, 2.69)
37.72 (21.43, 66.42)
3.21 (2.19, 4.71)
2.82 (1.62, 4.93)
2.15 (1.57, 2.96)
2.74 (1.81, 4.16)
Risk Factor
1
3
10
20
30
40
60
Adjusted Odds Ratio

The SURVEYLOGISTIC Procedure

Model Information	
Data Set	WORK.COMM
Response Variable	hosp
Number of Response Levels	2
Stratum Variable	INVASIVE
Number of Strata	2
Weight Variable	WEIGHT
Model	Binary Logit
Optimization Technique	Newton-Raphson
Variance Adjustment	Degrees of Freedom (DF)

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	846
Number of Observations Used	846
Sum of Weights Read	2907
Sum of Weights Used	2907

Response Profile			
Ordered Value	**hosp**	**Total Frequency**	**Total Weight**
1	No	590	2285.0000
2	Yes	256	622.0000

Probability modeled is hosp='Yes'.

Class Level Information		
Class	**Value**	**Design Variables**
mrsafinal	**MRSA**	1
	MSSA	0
kidney	**No**	0
	Yes	1
DIABETES	**No**	0
	Yes	1
SMOKER	**No**	0
	Yes	1

The SURVEYLOGISTIC Procedure

Class Level Information		
Class	**Value**	**Design Variables**
BSI	**No**	0
	Yes	1
WOUND	**No**	0
	Yes	1

Stratum Information		
Stratum Index	**INVASIVE**	**N Obs**
1	No	679
2	Yes	167

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	3020.422	2305.551
SC	3026.397	2353.350
-2 Log L	3018.422	2289.551

R-Square	0.2218	**Max-rescaled R-Square**	0.3433

Testing Global Null Hypothesis: BETA=0				
Test	**F Value**	**Num DF**	**Den DF**	**Pr > F**
Likelihood Ratio	30.28	7.0000	5907.98	<.0001
Score	36.84	7	838	<.0001
Wald	24.99	7	838	<.0001
NOTE: Second-order Rao-Scott design correction 0.0000 applied to the Likelihood Ratio test.				

The SURVEYLOGISTIC Procedure

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
SMOKER	20.63	1	844	<.0001
mrsafinal	9.00	1	844	0.0028
kidney	2.37	1	844	0.1239
DIABETES	18.60	1	844	<.0001
BSI	123.15	1	844	<.0001
WOUND	8.27	1	844	0.0041
newage	0.65	1	844	0.4201

Analysis of Maximum Likelihood Estimates					
Parameter		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-2.5522	0.2434	-10.49	<.0001
SMOKER	Yes	1.2164	0.2678	4.54	<.0001
mrsafinal	MRSA	0.6836	0.2279	3.00	0.0028
kidney	Yes	0.7472	0.4851	1.54	0.1239
DIABETES	Yes	1.2194	0.2828	4.31	<.0001
BSI	Yes	4.5960	0.4142	11.10	<.0001
WOUND	Yes	0.6934	0.2410	2.88	0.0041
newage		0.00406	0.00504	0.81	0.4201
NOTE: The degrees of freedom for the t tests is 844.					

Odds Ratio Estimates			
Effect	Point Estimate	95% Confidence Limits	
SMOKER Yes vs No	3.375	1.995	5.709
mrsafinal MRSA vs MSSA	1.981	1.266	3.098
kidney Yes vs No	2.111	0.815	5.471
DIABETES Yes vs No	3.385	1.943	5.897
BSI Yes vs No	99.091	43.954	223.391
WOUND Yes vs No	2.000	1.246	3.211
newage	1.004	0.994	1.014
NOTE: The degrees of freedom in computing the confidence limits is 844.			

The SURVEYLOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	83.3	**Somers' D**	0.674
Percent Discordant	15.9	**Gamma**	0.679
Percent Tied	0.8	**Tau-a**	0.285
Pairs	151040	**c**	0.837

The SURVEYLOGISTIC Procedure

Model Information	
Data Set	WORK.HOP
Response Variable	hosp
Number of Response Levels	2
Stratum Variable	INVASIVE
Number of Strata	2
Weight Variable	WEIGHT
Model	Binary Logit
Optimization Technique	Newton-Raphson
Variance Adjustment	Degrees of Freedom (DF)

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	601
Number of Observations Used	601
Sum of Weights Read	1456
Sum of Weights Used	1456

Response Profile			
Ordered Value	**hosp**	**Total Frequency**	**Total Weight**
1	No	145	523.00000
2	Yes	456	933.00000

Probability modeled is hosp='Yes'.

Class Level Information		
Class	**Value**	**Design Variables**
mrsafinal	**MRSA**	1
	MSSA	0
kidney	**No**	0
	Yes	1
DIABETES	**No**	0
	Yes	1
SMOKER	**No**	0
	Yes	1

The SURVEYLOGISTIC Procedure

Class Level Information		
Class	**Value**	**Design Variables**
BSI	**No**	0
	Yes	1
WOUND	**No**	0
	Yes	1

Stratum Information		
Stratum Index	**INVASIVE**	**N Obs**
1	No	274
2	Yes	327

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	1903.415	1544.926
SC	1908.698	1587.194
-2 Log L	1901.415	1528.926

R-Square	0.2257	**Max-rescaled R-Square**	0.3096

Testing Global Null Hypothesis: BETA=0				
Test	**F Value**	**Num DF**	**Den DF**	**Pr > F**
Likelihood Ratio	21.95	6.9999	4192.96	<.0001
Score	40.62	7	593	<.0001
Wald	10.58	7	593	<.0001
NOTE: Second-order Rao-Scott design correction 0.0000 applied to the Likelihood Ratio test.				

The SURVEYLOGISTIC Procedure

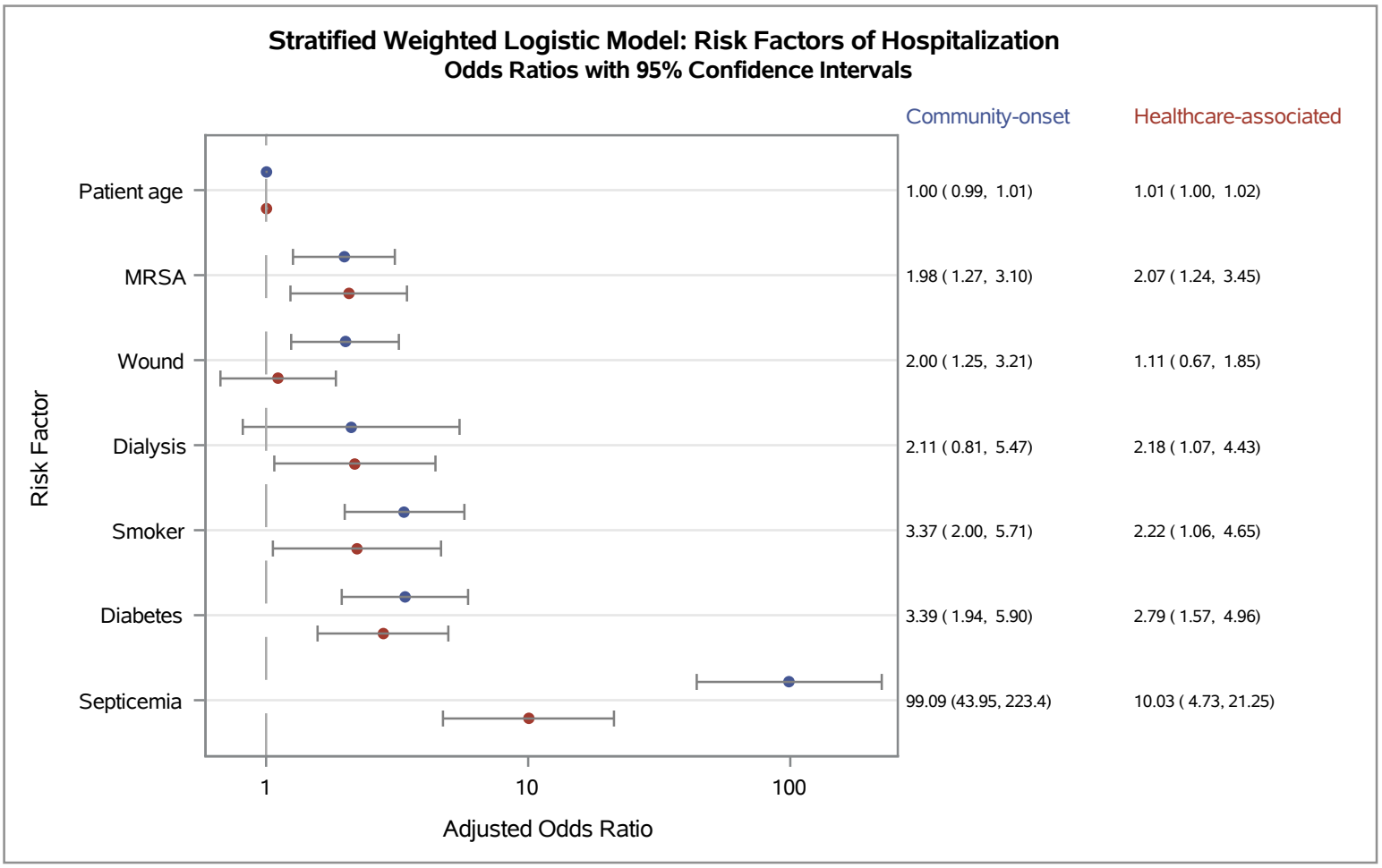
Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
SMOKER	4.50	1	599	0.0342
mrsafinal	7.76	1	599	0.0055
kidney	4.68	1	599	0.0309
DIABETES	12.32	1	599	0.0005
BSI	36.32	1	599	<.0001
WOUND	0.17	1	599	0.6819
newage	1.27	1	599	0.2608

Analysis of Maximum Likelihood Estimates					
Parameter		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-0.9211	0.3420	-2.69	0.0073
SMOKER	Yes	0.7982	0.3761	2.12	0.0342
mrsafinal	MRSA	0.7257	0.2606	2.79	0.0055
kidney	Yes	0.7799	0.3605	2.16	0.0309
DIABETES	Yes	1.0265	0.2924	3.51	0.0005
BSI	Yes	2.3051	0.3825	6.03	<.0001
WOUND	Yes	0.1059	0.2583	0.41	0.6819
newage		0.00669	0.00594	1.13	0.2608
NOTE: The degrees of freedom for the t tests is 599.					

Odds Ratio Estimates			
Effect	Point Estimate	95% Confidence Limits	
SMOKER Yes vs No	2.222	1.061	4.650
mrsafinal MRSA vs MSSA	2.066	1.239	3.447
kidney Yes vs No	2.181	1.075	4.428
DIABETES Yes vs No	2.791	1.572	4.957
BSI Yes vs No	10.025	4.730	21.248
WOUND Yes vs No	1.112	0.669	1.846
newage	1.007	0.995	1.019
NOTE: The degrees of freedom in computing the confidence limits is 599.			

The SURVEYLOGISTIC Procedure

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	81.3	**Somers' D**	0.630
Percent Discordant	18.3	**Gamma**	0.632
Percent Tied	0.4	**Tau-a**	0.231
Pairs	66120	**c**	0.815


Stratified Weighted Logistic Model: Risk Factors of Hospitalization
Odds Ratios with 95% Confidence Intervals
Community-onset
Healthcare-associated
Patient age
MRSA
Wound
Dialysis
Smoker
Diabetes
Septicemia
1.00 (0.99, 1.01)
1.01 (1.00, 1.02)
1.98 (1.27, 3.10)
2.07 (1.24, 3.45)
2.00 (1.25, 3.21)
1.11 (0.67, 1.85)
2.11 (0.81, 5.47)
2.18 (1.07, 4.43)
3.37 (2.00, 5.71)
2.22 (1.06, 4.65)
3.39 (1.94, 5.90)
2.79 (1.57, 4.96)
99.09 (43.95, 223.4)
10.03 (4.73, 21.25)
Risk Factor
1
10
100
Adjusted Odds Ratio

Weighted Logistic Random-Intercept Model Conditional on Hospital Cluster

The GLIMMIX Procedure

Model Information	
Data Set	S.STAPH
Response Variable	hosp
Response Distribution	Binary
Link Function	Logit
Variance Function	Default
Variance Matrix Blocked By	TXHOSP
Estimation Technique	Maximum Likelihood
Likelihood Approximation	Gauss-Hermite Quadrature
Degrees of Freedom Method	Between-Within
Fixed Effects SE Adjustment	Sandwich - MBN(df,r=1,d=2)

Class Level Information		
Class	**Levels**	**Values**
TXHOSP	35	GA002 GA003 GA004 GA006 GA008 GA009 GA010 GA011 GA013 GA015 GA016 GA018 GA020 GA021 GA024 GA026 GA027 GA029 GA030 GA032 GA034 GA040 GA046 GA048 GA050 GA056 GA059 GA065 GA066 GA069 GA070 GA071 GA308 GAMDO OSODC
mrsafinal	2	MRSA MSSA
kidney	2	Yes No
DIABETES	2	Yes No
SMOKER	2	Yes No
WOUND	2	Yes No
BSI	2	Yes No

Number of Observations Read	1447
Number of Observations Used	1447

Response Profile		
Ordered Value	**hosp**	**Total Frequency**
1	No	735
2	Yes	712

The GLIMMIX procedure is modeling the probability that hosp='Yes'.

The GLIMMIX Procedure

Dimensions	
G-side Cov. Parameters	1
Columns in X	14
Columns in Z per Subject	1
Subjects (Blocks in V)	35
Max Obs per Subject	447

Optimization Information	
Optimization Technique	Dual Quasi-Newton
Parameters in Optimization	9
Lower Boundaries	1
Upper Boundaries	0
Fixed Effects	Not Profiled
Starting From	GLM estimates
Quadrature Points	1

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	0	4	2809.7671492	.	2776.37
1	0	6	2798.1628166	11.60433259	120.7446
2	0	4	2738.8833011	59.27951551	40.08431
3	0	2	2732.1785248	6.70477633	19.49736
4	0	4	2728.8319698	3.34655496	14.21317
5	0	2	2728.0560481	0.77592168	4.021616
6	0	3	2727.5457195	0.51032860	34.32043
7	0	2	2727.0471694	0.49855013	35.08955
8	0	2	2726.3982854	0.64888401	8.700023
9	0	3	2726.1195295	0.27875594	9.737444
10	0	3	2726.0684443	0.05108520	3.665075
11	0	3	2726.0633297	0.00511460	1.240708
12	0	3	2726.0609073	0.00242232	0.580288
13	0	3	2726.0600159	0.00089147	0.146745
14	0	3	2726.0600102	0.00000571	0.011663

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

Weighted Logistic Random-Intercept Model Conditional on Hospital Cluster

The GLIMMIX Procedure

Fit Statistics	
-2 Log Likelihood	2726.06
AIC (smaller is better)	2744.06
AICC (smaller is better)	2744.19
BIC (smaller is better)	2758.06
CAIC (smaller is better)	2767.06
HQIC (smaller is better)	2748.89

Fit Statistics for Conditional Distribution	
-2 log L(hosp | r. effects)	2605.19
Pearson Chi-Square	1867.72
Pearson Chi-Square / DF	1.29

Covariance Parameter Estimates					
Cov Parm	**Subject**	**Estimate**	**Standard Error**	**Z Value**	**Pr > Z**
Intercept	TXHOSP	3.3699	2.2234	1.52	0.0648

Solutions for Fixed Effects											
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
Intercept							-2.2875	0.5930	34	-3.86	0.0005
SMOKER				Yes			0.5006	0.3209	18	1.56	0.1362
SMOKER				No			0	.	.	.	.
mrsafinal	MRSA						0.01493	0.2164	24	0.07	0.9456
mrsafinal	MSSA						0	.	.	.	.
kidney		Yes					1.2379	0.3360	22	3.68	0.0013
kidney		No					0	.	.	.	.
DIABETES			Yes				0.7665	0.2814	22	2.72	0.0124
DIABETES			No				0	.	.	.	.
WOUND					Yes		0.4193	0.2014	21	2.08	0.0498
WOUND					No		0	.	.	.	.
BSI						Yes	2.7266	0.3766	24	7.24	<.0001
BSI						No	0	.	.	.	.
newage							0.02178	0.005370	4321	4.06	<.0001

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_BSI**
			Yes			44.242				No		
MRSA						44.242	MSSA					
	Yes					44.242		No				
		Yes				44.242			No			
				Yes		44.242					No	
					Yes	44.242						No
						45.242						

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	_newage
			Yes			44.242				No		44.242
MRSA						44.242	MSSA					44.242
	Yes					44.242		No				44.242
		Yes				44.242			No			44.242
				Yes		44.242					No	44.242
					Yes	44.242						44.242
						45.242						44.242

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	Estimate
			Yes			44.242				No		1.650
MRSA						44.242	MSSA					1.015
	Yes					44.242		No				3.448
		Yes				44.242			No			2.152
				Yes		44.242					No	1.521
					Yes	44.242						15.281
						45.242						1.022

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	DF	95% Confidence Limits
			Yes			44.242				No		18	0.841
MRSA						44.242	MSSA					24	0.649
	Yes					44.242		No				22	1.718
		Yes				44.242			No			22	1.201
				Yes		44.242					No	21	1.000
					Yes	44.242						24	7.024
						45.242						4321	1.011

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Weighted Logistic Random-Intercept Model
Conditional on Hospital Cluster

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	95% Confidence Limits
			Yes			44.242				No		3.238
MRSA						44.242	MSSA					1.587
	Yes					44.242		No				6.923
		Yes				44.242			No			3.858
				Yes		44.242					No	2.312
					Yes	44.242						33.242
						45.242						1.033

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Type III Tests of Fixed Effects

Effect	Num DF	Den DF	Chi-Square	F Value	Pr > ChiSq	Pr > F
SMOKER	1	18	2.43	2.43	0.1188	0.1362
mrsafinal	1	24	0.00	0.00	0.9450	0.9456
kidney	1	22	13.57	13.57	0.0002	0.0013
DIABETES	1	22	7.42	7.42	0.0065	0.0124
WOUND	1	21	4.33	4.33	0.0374	0.0498
BSI	1	24	52.43	52.43	<.0001	<.0001
newage	1	4321	16.45	16.45	<.0001	<.0001

Solution for Random Effects

Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA002	1.0334	0.8120	4355	1.27	0.2032	0.05	-0.5585	2.6253
Intercept	TXHOSP GA003	0.1329	0.6562	4355	0.20	0.8395	0.05	-1.1536	1.4194
Intercept	TXHOSP GA004	1.5172	0.5979	4355	2.54	0.0112	0.05	0.3450	2.6894
Intercept	TXHOSP GA006	0.1466	0.9143	4355	0.16	0.8726	0.05	-1.6460	1.9391
Intercept	TXHOSP GA008	-0.9284	0.6812	4355	-1.36	0.1730	0.05	-2.2638	0.4071
Intercept	TXHOSP GA009	1.6056	0.6720	4355	2.39	0.0169	0.05	0.2882	2.9230
Intercept	TXHOSP GA010	1.1908	0.6076	4355	1.96	0.0501	0.05	-0.00038	2.3820
Intercept	TXHOSP GA011	1.3265	0.5764	4355	2.30	0.0214	0.05	0.1964	2.4566
Intercept	TXHOSP GA013	1.1744	0.7535	4355	1.56	0.1192	0.05	-0.3028	2.6516
Intercept	TXHOSP GA015	1.8955	0.6849	4355	2.77	0.0057	0.05	0.5527	3.2382
Intercept	TXHOSP GA016	0.7896	1.4907	4355	0.53	0.5963	0.05	-2.1328	3.7121

The GLIMMIX Procedure

Solution for Random Effects									
Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA018	0.5921	0.6871	4355	0.86	0.3889	0.05	-0.7550	1.9392
Intercept	TXHOSP GA020	1.0831	0.5938	4355	1.82	0.0682	0.05	-0.08112	2.2473
Intercept	TXHOSP GA021	1.0662	0.6055	4355	1.76	0.0783	0.05	-0.1208	2.2533
Intercept	TXHOSP GA024	0.7462	0.5985	4355	1.25	0.2126	0.05	-0.4273	1.9196
Intercept	TXHOSP GA026	1.3636	0.6238	4355	2.19	0.0289	0.05	0.1407	2.5865
Intercept	TXHOSP GA027	1.5192	0.6421	4355	2.37	0.0180	0.05	0.2603	2.7781
Intercept	TXHOSP GA029	-0.3851	1.5919	4355	-0.24	0.8089	0.05	-3.5060	2.7358
Intercept	TXHOSP GA030	-1.7577	1.1774	4355	-1.49	0.1356	0.05	-4.0660	0.5506
Intercept	TXHOSP GA032	1.7465	0.6516	4355	2.68	0.0074	0.05	0.4691	3.0239
Intercept	TXHOSP GA034	-0.4074	0.6659	4355	-0.61	0.5407	0.05	-1.7130	0.8981
Intercept	TXHOSP GA040	-4.6288	0.8987	4355	-5.15	<.0001	0.05	-6.3908	-2.8668
Intercept	TXHOSP GA046	0.2668	0.7549	4355	0.35	0.7238	0.05	-1.2133	1.7468
Intercept	TXHOSP GA048	-0.03924	1.0758	4355	-0.04	0.9709	0.05	-2.1483	2.0698
Intercept	TXHOSP GA050	-1.7129	1.4468	4355	-1.18	0.2365	0.05	-4.5494	1.1236
Intercept	TXHOSP GA056	0.3922	1.6040	4355	0.24	0.8068	0.05	-2.7524	3.5368
Intercept	TXHOSP GA059	0.4726	0.6188	4355	0.76	0.4451	0.05	-0.7406	1.6859
Intercept	TXHOSP GA065	-3.4060	1.3883	4355	-2.45	0.0142	0.05	-6.1277	-0.6842
Intercept	TXHOSP GA066	-0.8944	1.3783	4355	-0.65	0.5164	0.05	-3.5965	1.8077
Intercept	TXHOSP GA069	1.4220	1.4749	4355	0.96	0.3350	0.05	-1.4694	4.3135
Intercept	TXHOSP GA070	0.8376	0.6511	4355	1.29	0.1984	0.05	-0.4390	2.1141
Intercept	TXHOSP GA071	-0.1330	0.6855	4355	-0.19	0.8462	0.05	-1.4769	1.2110
Intercept	TXHOSP GA308	-2.3440	1.3530	4355	-1.73	0.0833	0.05	-4.9966	0.3086
Intercept	TXHOSP GAMDO	-3.2892	0.5959	4355	-5.52	<.0001	0.05	-4.4574	-2.1210
Intercept	TXHOSP OSODC	-1.8421	1.4661	4355	-1.26	0.2090	0.05	-4.7164	1.0322

The GLIMMIX Procedure

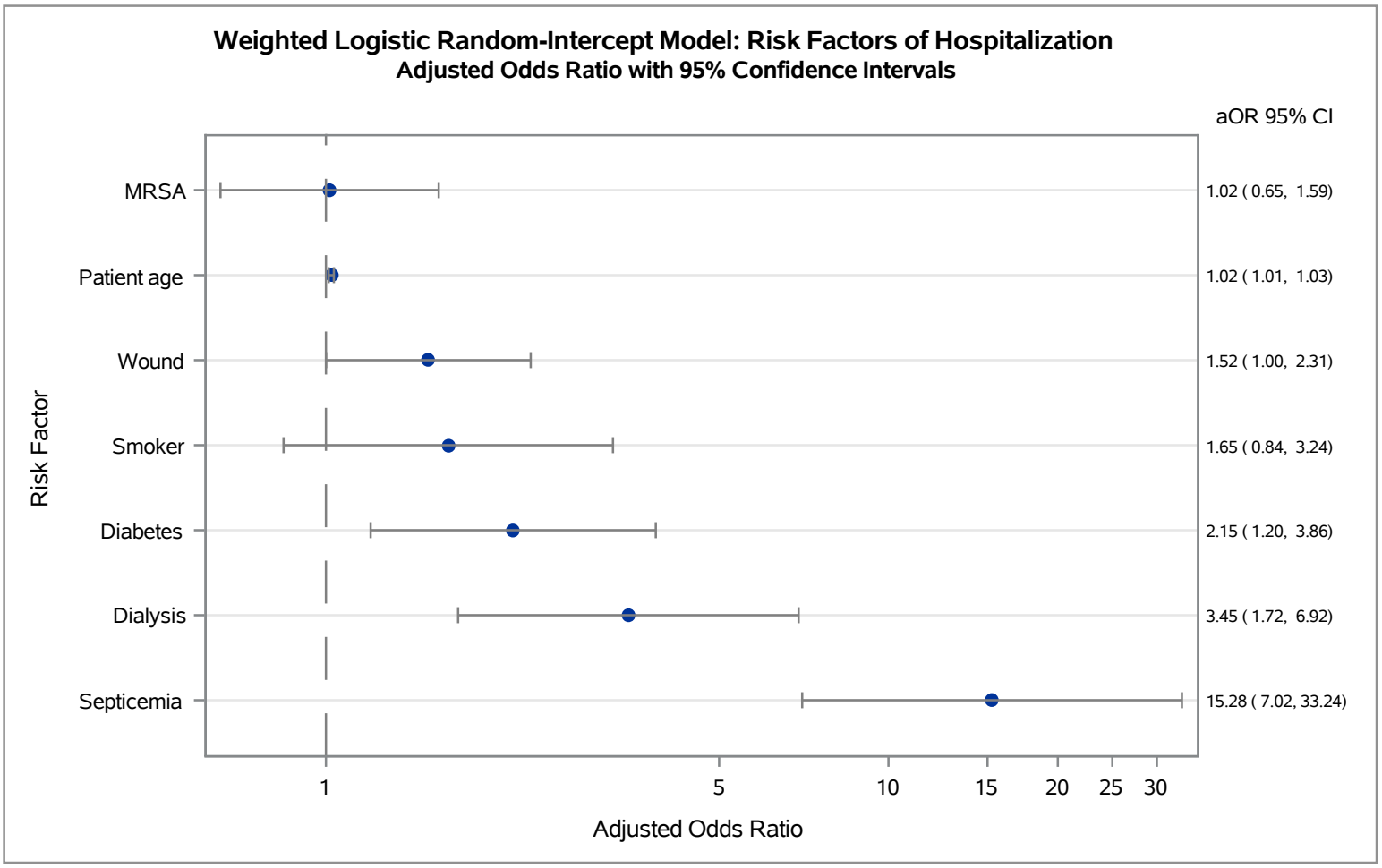
Empirical Correlation Matrix for Fixed Effects													
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Row**	**Col1**	**Col2**	**Col3**	**Col4**	**Col5**	**Col6**
Intercept							**1**	1.0000	-0.08803		-0.2056		-0.06619
SMOKER				Yes			**2**	-0.08803	1.0000		0.08159		0.03500
SMOKER				No			**3**			1.0000			
mrsafinal	MRSA						**4**	-0.2056	0.08159		1.0000		0.1599
mrsafinal	MSSA						**5**					1.0000	
kidney		Yes					**6**	-0.06619	0.03500		0.1599		1.0000
kidney		No					**7**						
DIABETES			Yes				**8**	-0.04415	0.2710		0.1505		-0.2076
DIABETES			No				**9**						
WOUND					Yes		**10**	-0.1236	0.3643		0.2547		-0.2413
WOUND					No		**11**						
BSI						Yes	**12**	-0.07947	0.1116		0.1467		0.02663
BSI						No	**13**						
newage							**14**	-0.1829	-0.07769		-0.3066		-0.3054

The GLIMMIX Procedure

Empirical Correlation Matrix for Fixed Effects														
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Row**	**Col7**	**Col8**	**Col9**	**Col10**	**Col11**	**Col12**	**Col13**
Intercept							**1**		-0.04415		-0.1236		-0.07947	
SMOKER				Yes			**2**		0.2710		0.3643		0.1116	
SMOKER				No			**3**							
mrsafinal	MRSA						**4**		0.1505		0.2547		0.1467	
mrsafinal	MSSA						**5**							
kidney		Yes					**6**		-0.2076		-0.2413		0.02663	
kidney		No					**7**	1.0000						
DIABETES			Yes				**8**		1.0000		0.07682		-0.05413	
DIABETES			No				**9**			1.0000				
WOUND					Yes		**10**		0.07682		1.0000		0.2771	
WOUND					No		**11**					1.0000		
BSI						Yes	**12**		-0.05413		0.2771		1.0000	
BSI						No	**13**							1.0000
newage							**14**		-0.1068		0.03849		-0.04147	

The GLIMMIX Procedure

Empirical Correlation Matrix for Fixed Effects								
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Row**	**Col14**
Intercept							**1**	-0.1829
SMOKER				Yes			**2**	-0.07769
SMOKER				No			**3**	
mrsafinal	MRSA						**4**	-0.3066
mrsafinal	MSSA						**5**	
kidney		Yes					**6**	-0.3054
kidney		No					**7**	
DIABETES			Yes				**8**	-0.1068
DIABETES			No				**9**	
WOUND					Yes		**10**	0.03849
WOUND					No		**11**	
BSI						Yes	**12**	-0.04147
BSI						No	**13**	
newage							**14**	1.0000


Weighted Logistic Random-Intercept Model: Risk Factors of Hospitalization
Adjusted Odds Ratio with 95% Confidence Intervals
aOR 95% CI
MRSA
Patient age
Wound
Smoker
Diabetes
Dialysis
Septicemia
1.02 (0.65, 1.59)
1.02 (1.01, 1.03)
1.52 (1.00, 2.31)
1.65 (0.84, 3.24)
2.15 (1.20, 3.86)
3.45 (1.72, 6.92)
15.28 (7.02, 33.24)
Risk Factor
1
5
10
15
20
25
30
Adjusted Odds Ratio

The GLIMMIX Procedure

Model Information	
Data Set	WORK.COMM
Response Variable	hosp
Response Distribution	Binary
Link Function	Logit
Variance Function	Default
Variance Matrix Blocked By	TXHOSP
Estimation Technique	Maximum Likelihood
Likelihood Approximation	Gauss-Hermite Quadrature
Degrees of Freedom Method	Between-Within
Fixed Effects SE Adjustment	Sandwich - MBN(df,r=1,d=2)

Class Level Information		
Class	**Levels**	**Values**
TXHOSP	30	GA002 GA003 GA004 GA006 GA008 GA009 GA010 GA011 GA013 GA015 GA016 GA018 GA020 GA021 GA024 GA026 GA027 GA030 GA032 GA034 GA040 GA046 GA048 GA050 GA059 GA066 GA069 GA070 GA071 GAMDO
mrsafinal	2	MRSA MSSA
kidney	2	Yes No
DIABETES	2	Yes No
SMOKER	2	Yes No
WOUND	2	Yes No
BSI	2	Yes No

Number of Observations Read	846
Number of Observations Used	846

Response Profile		
Ordered Value	**hosp**	**Total Frequency**
1	No	590
2	Yes	256

The GLIMMIX procedure is modeling the probability that hosp='Yes'.

The GLIMMIX Procedure

Dimensions	
G-side Cov. Parameters	1
Columns in X	14
Columns in Z per Subject	1
Subjects (Blocks in V)	30
Max Obs per Subject	380

Optimization Information	
Optimization Technique	Dual Quasi-Newton
Parameters in Optimization	9
Lower Boundaries	1
Upper Boundaries	0
Fixed Effects	Not Profiled
Starting From	GLM estimates
Quadrature Points	1

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	0	4	1501.0917107	.	2753.628
1	0	6	1480.828851	20.26285972	79.96838
2	0	2	1446.3052458	34.52360519	25.9747
3	0	2	1438.6102748	7.69497099	25.24847
4	0	4	1434.7206514	3.88962333	47.57425
5	0	4	1431.4966568	3.22399465	12.60808
6	0	3	1431.0656799	0.43097691	13.71226
7	0	4	1430.0803129	0.98536704	5.962923
8	0	3	1429.733555	0.34675782	14.80668
9	0	3	1429.6672263	0.06632873	2.606062
10	0	3	1429.6524119	0.01481443	1.815746
11	0	2	1429.6338936	0.01851827	2.527292
12	0	3	1429.6301493	0.00374429	0.276731
13	0	3	1429.6300976	0.00005169	0.184168
14	0	3	1429.6300848	0.00001285	0.016909

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

The GLIMMIX Procedure

Fit Statistics	
-2 Log Likelihood	1429.63
AIC (smaller is better)	1447.63
AICC (smaller is better)	1447.85
BIC (smaller is better)	1460.24
CAIC (smaller is better)	1469.24
HQIC (smaller is better)	1451.66

Fit Statistics for Conditional Distribution	
-2 log L(hosp | r. effects)	1329.79
Pearson Chi-Square	1214.52
Pearson Chi-Square / DF	1.44

Covariance Parameter Estimates					
Cov Parm	**Subject**	**Estimate**	**Standard Error**	**Z Value**	**Pr > Z**
Intercept	TXHOSP	4.1805	2.3097	1.81	0.0351

Solutions for Fixed Effects											
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
Intercept							-2.5290	0.6961	29	-3.63	0.0011
SMOKER				Yes			0.6718	0.4220	17	1.59	0.1298
SMOKER				No			0	.	.	.	.
mrsafinal	MRSA						-0.1810	0.2851	22	-0.64	0.5320
mrsafinal	MSSA						0	.	.	.	.
kidney		Yes					1.6130	0.6778	10	2.38	0.0386
kidney		No					0	.	.	.	.
DIABETES			Yes				1.1581	0.4643	17	2.49	0.0232
DIABETES			No				0	.	.	.	.
WOUND					Yes		0.5562	0.3572	16	1.56	0.1391
WOUND					No		0	.	.	.	.
BSI						Yes	4.0945	0.7998	19	5.12	<.0001
BSI						No	0	.	.	.	.
newage							0.02049	0.007379	2870	2.78	0.0055

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_BSI**
			Yes			39.545				No		
MRSA						39.545	MSSA					
	Yes					39.545		No				
		Yes				39.545			No			
				Yes		39.545					No	
					Yes	39.545						No
						40.545						

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_newage**
			Yes			39.545				No		39.545
MRSA						39.545	MSSA					39.545
	Yes					39.545		No				39.545
		Yes				39.545			No			39.545
				Yes		39.545					No	39.545
					Yes	39.545						39.545
						40.545						39.545

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**Estimate**
			Yes			39.545				No		1.958
MRSA						39.545	MSSA					0.834
	Yes					39.545		No				5.018
		Yes				39.545			No			3.184
				Yes		39.545					No	1.744
					Yes	39.545						60.007
						40.545						1.021

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	DF	95% Confidence Limits
			Yes			39.545				No		17	0.804
MRSA						39.545	MSSA					22	0.462
	Yes					39.545		No				10	1.108
		Yes				39.545			No			17	1.196
				Yes		39.545					No	16	0.818
					Yes	39.545						19	11.252
						40.545						2870	1.006

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	95% Confidence Limits
			Yes			39.545				No		4.768
MRSA						39.545	MSSA					1.507
	Yes					39.545		No				22.721
		Yes				39.545			No			8.480
				Yes		39.545					No	3.719
					Yes	39.545						320.033
						40.545						1.036

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Type III Tests of Fixed Effects

Effect	Num DF	Den DF	F Value	Pr > F
SMOKER	1	17	2.53	0.1298
mrsafinal	1	22	0.40	0.5320
kidney	1	10	5.66	0.0386
DIABETES	1	17	6.22	0.0232
WOUND	1	16	2.42	0.1391
BSI	1	19	26.21	<.0001
newage	1	2870	7.71	0.0055

Solution for Random Effects

Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA002	-1.3852	1.0465	2899	-1.32	0.1857	0.05	-3.4372	0.6668
Intercept	TXHOSP GA003	-0.6542	0.8484	2899	-0.77	0.4407	0.05	-2.3177	1.0093
Intercept	TXHOSP GA004	0.7617	0.6833	2899	1.11	0.2651	0.05	-0.5781	2.1015
Intercept	TXHOSP GA006	-1.3408	1.4341	2899	-0.93	0.3499	0.05	-4.1527	1.4712
Intercept	TXHOSP GA008	-1.6991	0.9333	2899	-1.82	0.0688	0.05	-3.5291	0.1309
Intercept	TXHOSP GA009	1.3989	0.8269	2899	1.69	0.0908	0.05	-0.2224	3.0202
Intercept	TXHOSP GA010	1.2832	0.6953	2899	1.85	0.0651	0.05	-0.08013	2.6465
Intercept	TXHOSP GA011	1.2810	0.6697	2899	1.91	0.0559	0.05	-0.03207	2.5941
Intercept	TXHOSP GA013	2.4816	0.8876	2899	2.80	0.0052	0.05	0.7413	4.2219
Intercept	TXHOSP GA015	2.3732	0.8225	2899	2.89	0.0039	0.05	0.7605	3.9860
Intercept	TXHOSP GA016	0.5821	1.6877	2899	0.34	0.7302	0.05	-2.7270	3.8912
Intercept	TXHOSP GA018	1.0116	0.8259	2899	1.22	0.2207	0.05	-0.6077	2.6310

The GLIMMIX Procedure

Solution for Random Effects									
Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA020	0.9734	0.6947	2899	1.40	0.1613	0.05	-0.3887	2.3355
Intercept	TXHOSP GA021	0.6896	0.7048	2899	0.98	0.3279	0.05	-0.6923	2.0715
Intercept	TXHOSP GA024	-0.09621	0.7157	2899	-0.13	0.8931	0.05	-1.4995	1.3071
Intercept	TXHOSP GA026	1.4177	0.7398	2899	1.92	0.0554	0.05	-0.03294	2.8683
Intercept	TXHOSP GA027	1.7194	0.7319	2899	2.35	0.0189	0.05	0.2842	3.1545
Intercept	TXHOSP GA030	-1.7086	1.3302	2899	-1.28	0.1991	0.05	-4.3168	0.8996
Intercept	TXHOSP GA032	1.5642	0.7456	2899	2.10	0.0360	0.05	0.1022	3.0262
Intercept	TXHOSP GA034	-1.4768	0.8780	2899	-1.68	0.0927	0.05	-3.1983	0.2447
Intercept	TXHOSP GA040	-4.0165	1.0574	2899	-3.80	0.0001	0.05	-6.0899	-1.9432
Intercept	TXHOSP GA046	2.8069	1.3843	2899	2.03	0.0427	0.05	0.09259	5.5212
Intercept	TXHOSP GA048	-0.7364	1.5905	2899	-0.46	0.6434	0.05	-3.8551	2.3823
Intercept	TXHOSP GA050	-2.4485	1.6212	2899	-1.51	0.1311	0.05	-5.6272	0.7302
Intercept	TXHOSP GA059	0.8361	0.7259	2899	1.15	0.2495	0.05	-0.5872	2.2595
Intercept	TXHOSP GA066	-0.7882	1.5712	2899	-0.50	0.6160	0.05	-3.8690	2.2927
Intercept	TXHOSP GA069	0.3367	1.8053	2899	0.19	0.8520	0.05	-3.2030	3.8764
Intercept	TXHOSP GA070	1.3729	0.8034	2899	1.71	0.0876	0.05	-0.2024	2.9483
Intercept	TXHOSP GA071	-1.0502	0.8703	2899	-1.21	0.2276	0.05	-2.7566	0.6561
Intercept	TXHOSP GAMDO	-4.2320	0.7083	2899	-5.97	<.0001	0.05	-5.6209	-2.8431

The GLIMMIX Procedure

Model Information	
Data Set	WORK.HOP
Response Variable	hosp
Response Distribution	Binary
Link Function	Logit
Variance Function	Default
Variance Matrix Blocked By	TXHOSP
Estimation Technique	Maximum Likelihood
Likelihood Approximation	Gauss-Hermite Quadrature
Degrees of Freedom Method	Between-Within
Fixed Effects SE Adjustment	Sandwich - MBN(df,r=1,d=2)

Class Level Information		
Class	**Levels**	**Values**
TXHOSP	31	GA002 GA003 GA004 GA006 GA008 GA009 GA010 GA011 GA013 GA015 GA018 GA020 GA021 GA024 GA026 GA027 GA029 GA032 GA034 GA040 GA046 GA048 GA056 GA059 GA065 GA069 GA070 GA071 GA308 GAMDO OSODC
mrsafinal	2	MRSA MSSA
kidney	2	Yes No
DIABETES	2	Yes No
SMOKER	2	Yes No
WOUND	2	Yes No
BSI	2	Yes No

Number of Observations Read	601
Number of Observations Used	601

Response Profile		
Ordered Value	**hosp**	**Total Frequency**
1	No	145
2	Yes	456

The GLIMMIX procedure is modeling the probability that hosp='Yes'.

The GLIMMIX Procedure

Dimensions	
G-side Cov. Parameters	1
Columns in X	14
Columns in Z per Subject	1
Subjects (Blocks in V)	31
Max Obs per Subject	120

Optimization Information	
Optimization Technique	Dual Quasi-Newton
Parameters in Optimization	9
Lower Boundaries	1
Upper Boundaries	0
Fixed Effects	Not Profiled
Starting From	GLM estimates
Quadrature Points	5

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	0	4	1146.8534811	.	326.408
1	0	5	1146.5142917	0.33918935	22.92349
2	0	4	1135.1806641	11.33362762	8.293453
3	0	2	1132.1465315	3.03413262	9.172207
4	0	4	1130.8451183	1.30141320	15.36075
5	0	4	1129.7493425	1.09577577	2.771987
6	0	2	1129.3311559	0.41818661	59.56893
7	0	2	1128.638522	0.69263391	3.230332
8	0	3	1128.3265204	0.31200159	26.83417
9	0	2	1128.1767489	0.14977150	41.32122
10	0	2	1128.127342	0.04940697	49.8322
11	0	2	1128.0514506	0.07589132	19.01861
12	0	3	1128.0280862	0.02336444	5.386648
13	0	3	1128.0140478	0.01403844	0.498978
14	0	3	1128.0139151	0.00013265	0.16206
15	0	3	1128.0139063	0.00000880	0.149955

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

The GLIMMIX Procedure

Fit Statistics	
-2 Log Likelihood	1128.01
AIC (smaller is better)	1146.01
AICC (smaller is better)	1146.32
BIC (smaller is better)	1158.92
CAIC (smaller is better)	1167.92
HQIC (smaller is better)	1150.22

Fit Statistics for Conditional Distribution	
-2 log L(hosp | r. effects)	1034.77
Pearson Chi-Square	596.07
Pearson Chi-Square / DF	0.99

Covariance Parameter Estimates					
Cov Parm	**Subject**	**Estimate**	**Standard Error**	**Z Value**	**Pr > Z**
Intercept	TXHOSP	4.0459	3.0019	1.35	0.0889

Solutions for Fixed Effects											
Effect	**mrsafinal**	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
Intercept							-0.4119	0.7588	30	-0.54	0.5912
SMOKER				Yes			0.4916	0.7261	16	0.68	0.5081
SMOKER				No			0	.	.	.	.
mrsafinal	MRSA						0.2375	0.4195	22	0.57	0.5770
mrsafinal	MSSA						0	.	.	.	.
kidney		Yes					0.8999	0.4452	19	2.02	0.0576
kidney		No					0	.	.	.	.
DIABETES			Yes				0.6596	0.3741	19	1.76	0.0940
DIABETES			No				0	.	.	.	.
WOUND					Yes		-0.1607	0.3984	19	-0.40	0.6912
WOUND					No		0	.	.	.	.
BSI						Yes	1.6658	0.5673	21	2.94	0.0079
BSI						No	0	.	.	.	.
newage							0.005249	0.007870	1418	0.67	0.5049

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_BSI**
			Yes			53.62				No		
MRSA						53.62	MSSA					
	Yes					53.62		No				
		Yes				53.62			No			
				Yes		53.62					No	
					Yes	53.62						No
						54.62						

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**_newage**
			Yes			53.62				No		53.62
MRSA						53.62	MSSA					53.62
	Yes					53.62		No				53.62
		Yes				53.62			No			53.62
				Yes		53.62					No	53.62
					Yes	53.62						53.62
						54.62						53.62

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates												
mrsafinal	**kidney**	**DIABETES**	**SMOKER**	**WOUND**	**BSI**	**newage**	**_mrsafinal**	**_kidney**	**_DIABETES**	**_SMOKER**	**_WOUND**	**Estimate**
			Yes			53.62				No		1.635
MRSA						53.62	MSSA					1.268
	Yes					53.62		No				2.459
		Yes				53.62			No			1.934
				Yes		53.62					No	0.852
					Yes	53.62						5.290
						54.62						1.005

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates													
mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	DF	95% Confidence Limits
			Yes			53.62				No		16	0.351
MRSA						53.62	MSSA					22	0.531
	Yes					53.62		No				19	0.969
		Yes				53.62			No			19	0.884
				Yes		53.62					No	19	0.370
					Yes	53.62						21	1.626
						54.62						1418	0.990

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Odds Ratio Estimates

mrsafinal	kidney	DIABETES	SMOKER	WOUND	BSI	newage	_mrsafinal	_kidney	_DIABETES	_SMOKER	_WOUND	95% Confidence Limits
			Yes			53.62				No		7.620
MRSA						53.62	MSSA					3.027
	Yes					53.62		No				6.245
		Yes				53.62			No			4.232
				Yes		53.62					No	1.960
					Yes	53.62						17.212
						54.62						1.021

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Type III Tests of Fixed Effects

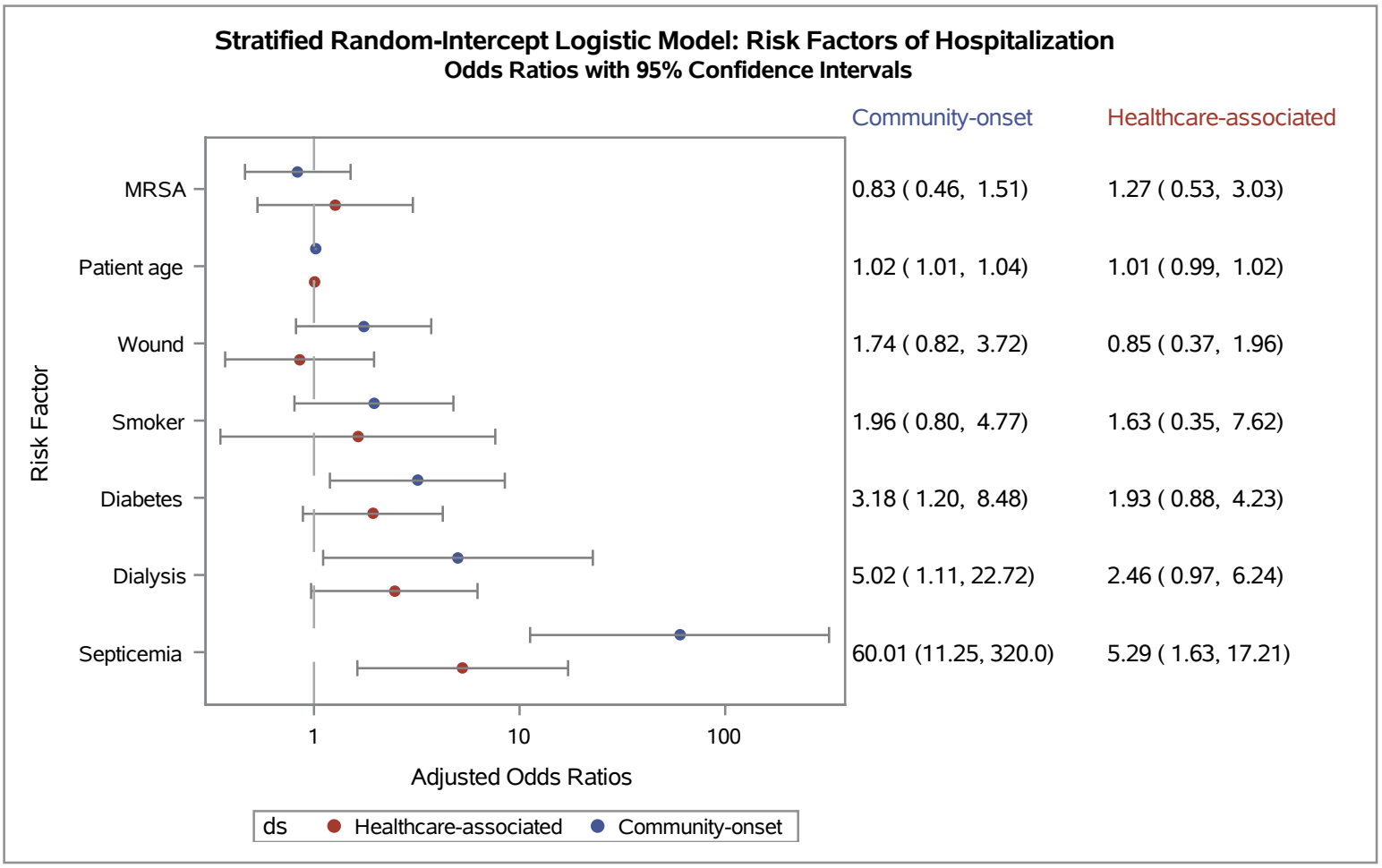
Effect	Num DF	Den DF	F Value	Pr > F
SMOKER	1	16	0.46	0.5081
mrsafinal	1	22	0.32	0.5770
kidney	1	19	4.09	0.0576
DIABETES	1	19	3.11	0.0940
WOUND	1	19	0.16	0.6912
BSI	1	21	8.62	0.0079
newage	1	1418	0.44	0.5049

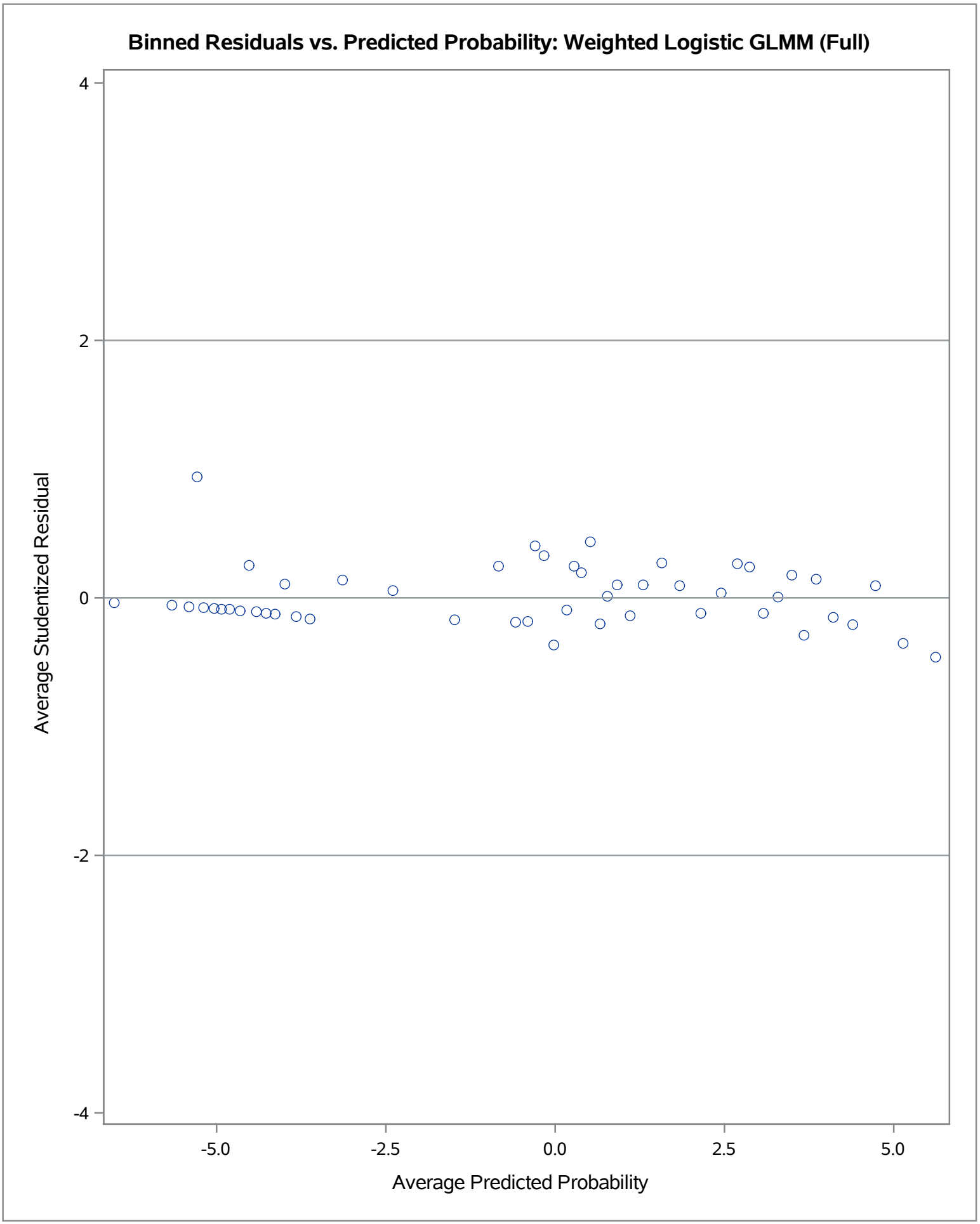
Solution for Random Effects

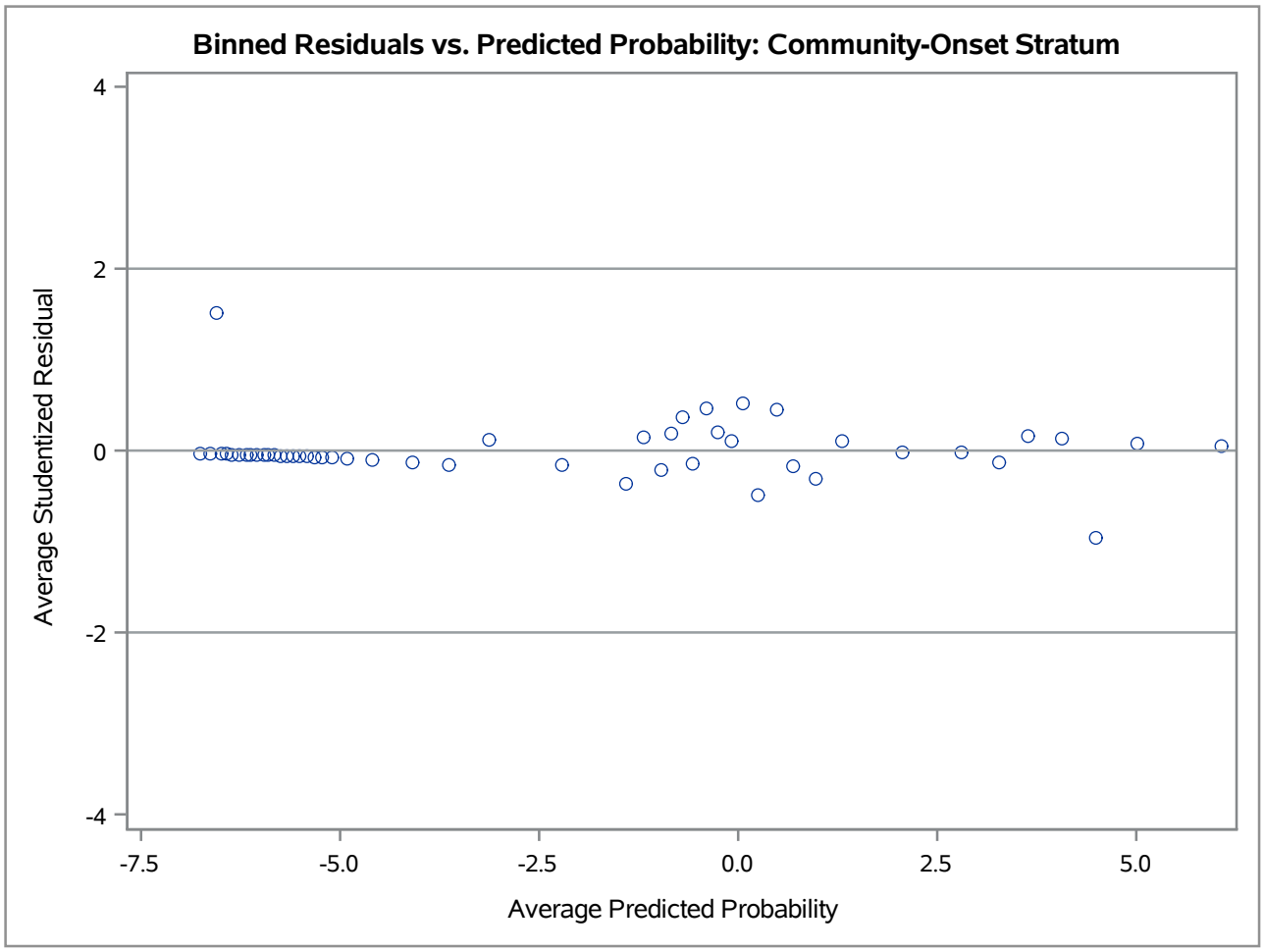
Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA002	2.6027	1.3808	1448	1.88	0.0596	0.05	-0.1059	5.3113
Intercept	TXHOSP GA003	0.5977	0.8245	1448	0.72	0.4686	0.05	-1.0196	2.2150
Intercept	TXHOSP GA004	1.8489	0.7062	1448	2.62	0.0089	0.05	0.4637	3.2342
Intercept	TXHOSP GA006	1.3323	1.5733	1448	0.85	0.3972	0.05	-1.7539	4.4186
Intercept	TXHOSP GA008	-0.9807	0.8354	1448	-1.17	0.2406	0.05	-2.6195	0.6580
Intercept	TXHOSP GA009	1.0063	0.7729	1448	1.30	0.1932	0.05	-0.5099	2.5224
Intercept	TXHOSP GA010	0.8390	0.7660	1448	1.10	0.2736	0.05	-0.6636	2.3417
Intercept	TXHOSP GA011	0.8599	0.6431	1448	1.34	0.1814	0.05	-0.4016	2.1213
Intercept	TXHOSP GA013	-2.0640	1.1511	1448	-1.79	0.0732	0.05	-4.3219	0.1940
Intercept	TXHOSP GA015	-0.1339	0.8388	1448	-0.16	0.8732	0.05	-1.7793	1.5115
Intercept	TXHOSP GA018	0.1910	0.8579	1448	0.22	0.8238	0.05	-1.4918	1.8738
Intercept	TXHOSP GA020	1.6896	0.7831	1448	2.16	0.0311	0.05	0.1534	3.2258

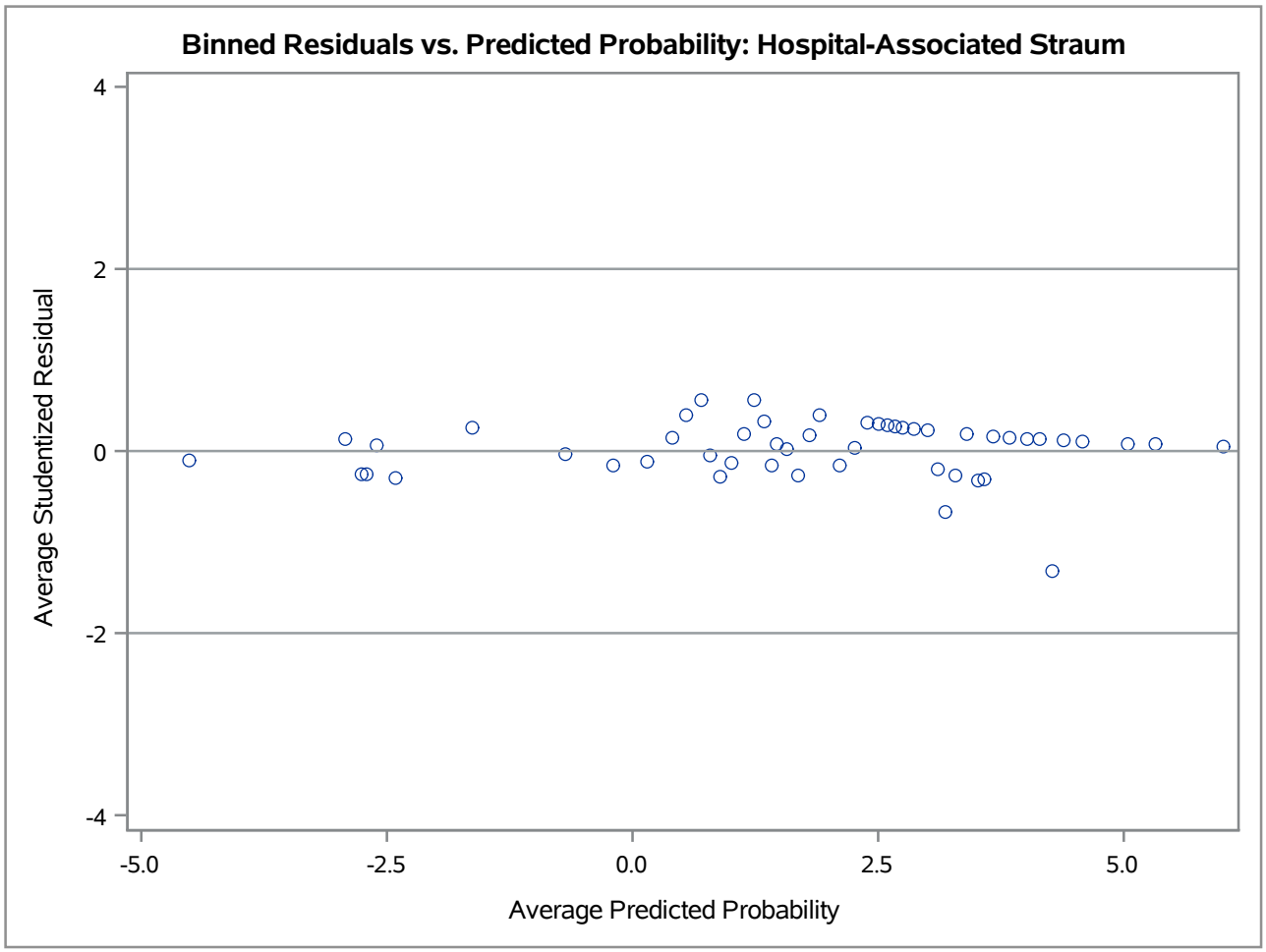
The GLIMMIX Procedure

Solution for Random Effects									
Effect	Subject	Estimate	Std Err Pred	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	TXHOSP GA021	1.0536	0.6838	1448	1.54	0.1236	0.05	-0.2877	2.3949
Intercept	TXHOSP GA024	0.5776	0.6655	1448	0.87	0.3856	0.05	-0.7279	1.8831
Intercept	TXHOSP GA026	0.9917	0.7209	1448	1.38	0.1691	0.05	-0.4224	2.4058
Intercept	TXHOSP GA027	0.02234	0.8926	1448	0.03	0.9800	0.05	-1.7286	1.7733
Intercept	TXHOSP GA029	-1.0374	1.5837	1448	-0.66	0.5126	0.05	-4.1440	2.0692
Intercept	TXHOSP GA032	2.9202	1.3270	1448	2.20	0.0279	0.05	0.3170	5.5233
Intercept	TXHOSP GA034	-0.3605	0.7015	1448	-0.51	0.6074	0.05	-1.7366	1.0156
Intercept	TXHOSP GA040	-4.5150	1.1279	1448	-4.00	<.0001	0.05	-6.7275	-2.3025
Intercept	TXHOSP GA046	-1.2222	0.8766	1448	-1.39	0.1634	0.05	-2.9417	0.4972
Intercept	TXHOSP GA048	0.7424	1.6589	1448	0.45	0.6546	0.05	-2.5117	3.9965
Intercept	TXHOSP GA056	0.5880	1.6793	1448	0.35	0.7263	0.05	-2.7061	3.8821
Intercept	TXHOSP GA059	-0.07575	0.7352	1448	-0.10	0.9180	0.05	-1.5179	1.3664
Intercept	TXHOSP GA065	-3.3498	1.5351	1448	-2.18	0.0293	0.05	-6.3611	-0.3385
Intercept	TXHOSP GA069	1.0688	1.6253	1448	0.66	0.5109	0.05	-2.1194	4.2571
Intercept	TXHOSP GA070	0.1242	0.7144	1448	0.17	0.8620	0.05	-1.2772	1.5255
Intercept	TXHOSP GA071	0.3750	0.9252	1448	0.41	0.6853	0.05	-1.4400	2.1900
Intercept	TXHOSP GA308	-2.6334	1.4665	1448	-1.80	0.0727	0.05	-5.5100	0.2432
Intercept	TXHOSP GAMDO	-2.4710	0.6609	1448	-3.74	0.0002	0.05	-3.7674	-1.1746
Intercept	TXHOSP OSODC	-1.8292	1.5960	1448	-1.15	0.2519	0.05	-4.9600	1.3016

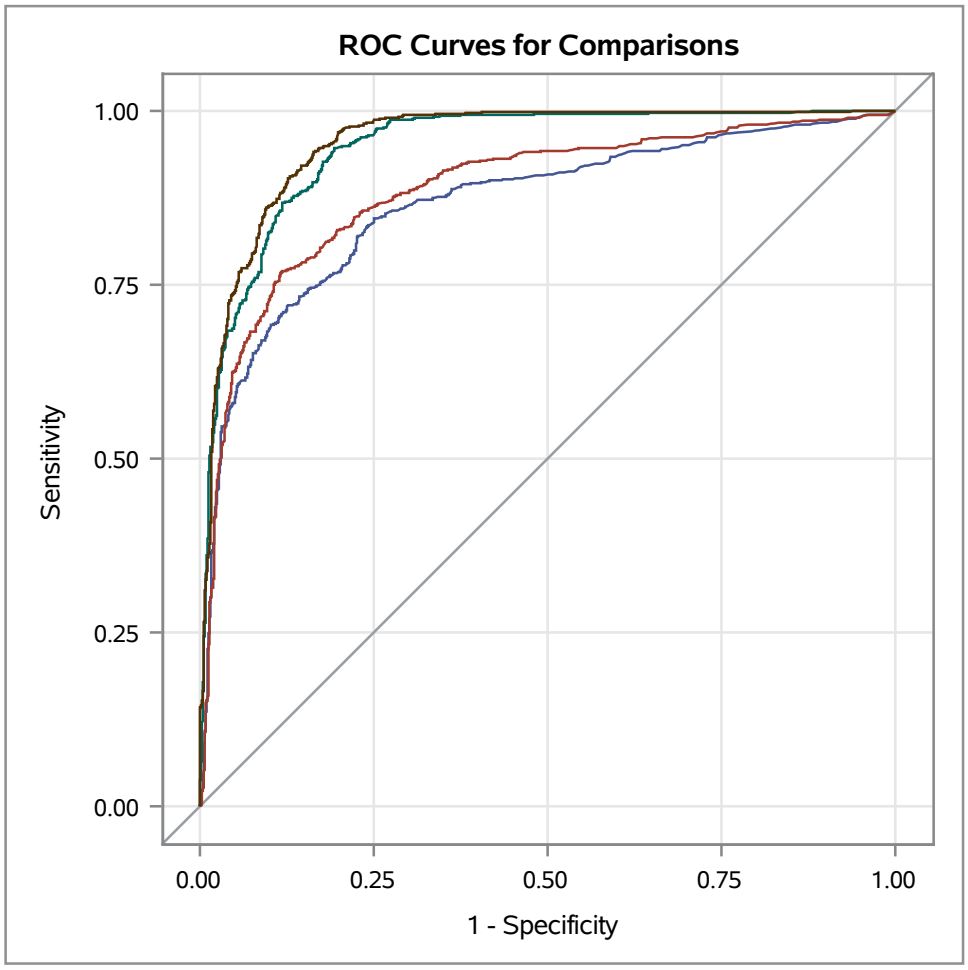

Stratified Random-Intercept Logistic Model: Risk Factors of Hospitalization
Odds Ratios with 95% Confidence Intervals
Community-onset
Healthcare-associated
MRSA
Patient age
Wound
Smoker
Diabetes
Dialysis
Septicemia
0.83 (0.46, 1.51)
1.27 (0.53, 3.03)
1.02 (1.01, 1.04)
1.01 (0.99, 1.02)
1.74 (0.82, 3.72)
0.85 (0.37, 1.96)
1.96 (0.80, 4.77)
1.63 (0.35, 7.62)
3.18 (1.20, 8.48)
1.93 (0.88, 4.23)
5.02 (1.11, 22.72)
2.46 (0.97, 6.24)
60.01 (11.25, 320.0)
5.29 (1.63, 17.21)
Risk Factor
1
10
100
Adjusted Odds Ratios
ds
Healthcare-associated
Community-onset


Binned Residuals vs. Predicted Probability: Weighted Logistic GLMM (Full)
Average Studentized Residual
4
2
0
-2
-4
-5.0
-2.5
0.0
2.5
5.0
Average Predicted Probability


Binned Residuals vs. Predicted Probability: Community-Onset Stratum
Average Studentized Residual
4
2
0
-2
-4
-7.5
-5.0
-2.5
0.0
2.5
5.0
Average Predicted Probability


Binned Residuals vs. Predicted Probability: Hospital-Associated Straum
Average Studentized Residual
4
2
0
-2
-4
-5.0
-2.5
0.0
2.5
5.0
Average Predicted Probability

The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Baseline_Weighted_Logistic_Model	0.8654	0.00980	0.8462	0.8846	0.7309	0.7314	0.3656
Stratified Weighted Logistic Model	0.8869	0.00900	0.8693	0.9046	0.7739	0.7742	0.3871
Random-effects Weighted Logistic Model	0.9471	0.00553	0.9362	0.9579	0.8942	0.8942	0.4473
Stratified, Random-effects Weighted Logistic Model	0.9557	0.00502	0.9459	0.9656	0.9115	0.9115	0.4559

The LOGISTIC Procedure

Model Information	
Data Set	WORK.TRAINING
Response Variable	HOSPITAL
Number of Response Levels	2
Weight Variable	WEIGHT
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1155
Number of Observations Used	1155
Sum of Weights Read	3510
Sum of Weights Used	3510

Response Profile			
Ordered Value	**HOSPITAL**	**Total Frequency**	**Total Weight**
1	0	567	2169.0000
2	1	588	1341.0000

Probability modeled is HOSPITAL='1'.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	4670.717	3330.289
SC	4675.769	3375.756
-2 Log L	4668.717	3312.289

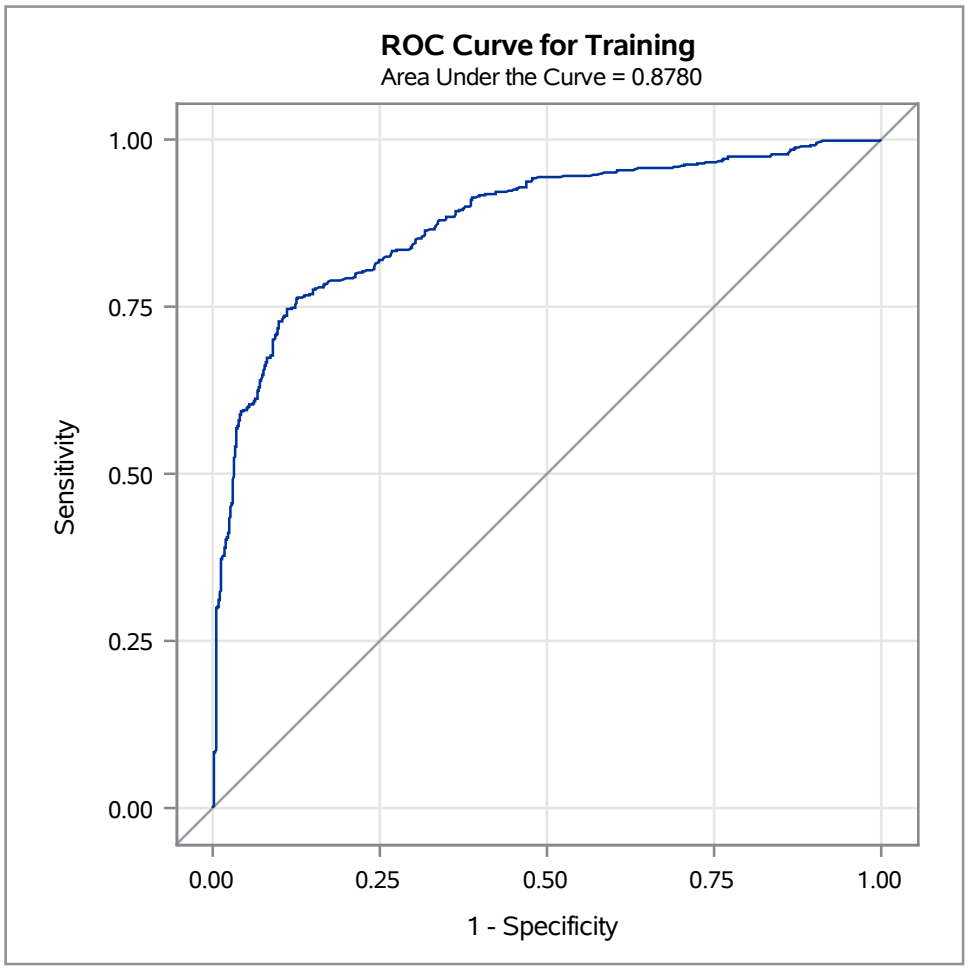
Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	1356.4278	8	<.0001
Score	1147.9990	8	<.0001
Wald	685.2433	8	<.0001

The LOGISTIC Procedure

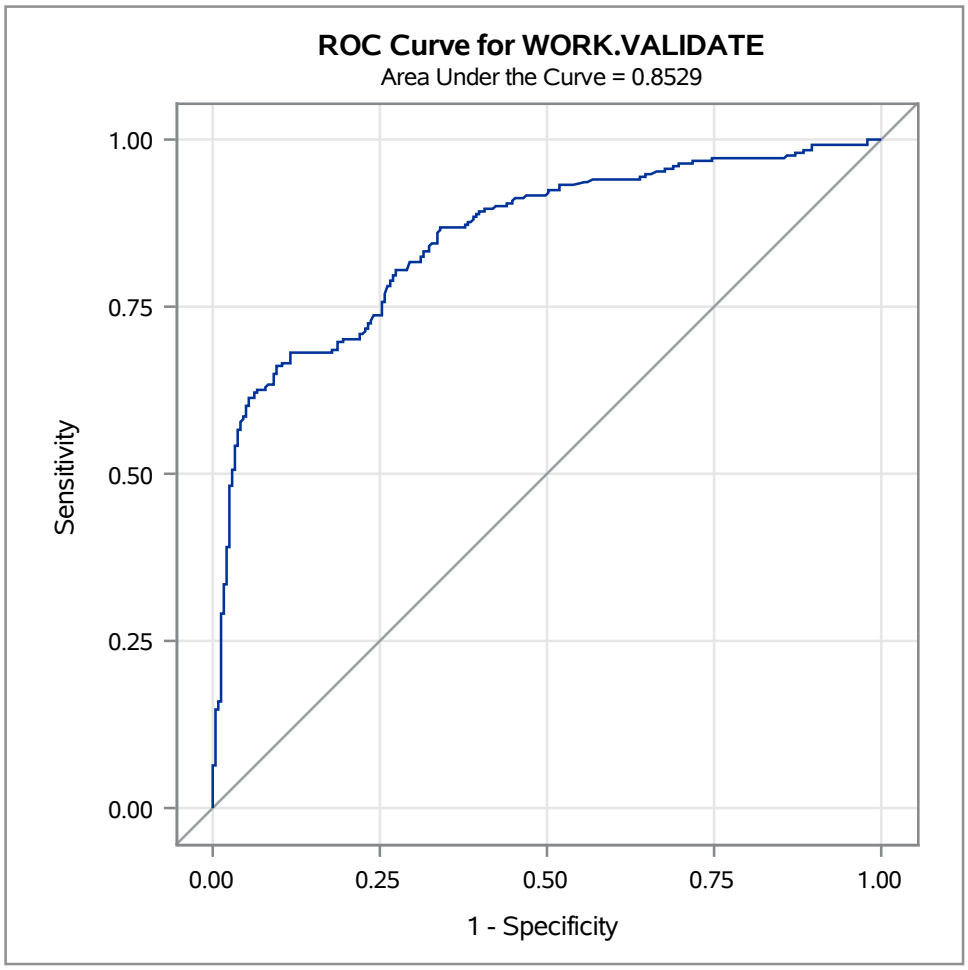
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.1101	0.1331	69.5132	<.0001
UND	1	-1.0933	0.1128	93.9653	<.0001
DISLTC8	1	2.0516	0.2517	66.4630	<.0001
DIABETES	1	0.8131	0.1074	57.3384	<.0001
RENAL	1	1.2007	0.1559	59.3029	<.0001
SST	1	-0.7378	0.0919	64.4613	<.0001
mrsafinal	1	0.8302	0.0919	81.6576	<.0001
newage	1	0.00818	0.00212	14.8212	0.0001
BSI	1	2.7088	0.2573	110.8282	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
UND	0.335	0.269	0.418
DISLTC8	7.780	4.751	12.741
DIABETES	2.255	1.827	2.783
RENAL	3.322	2.448	4.510
SST	0.478	0.399	0.573
mrsafinal	2.294	1.916	2.746
newage	1.008	1.004	1.012
BSI	15.012	9.066	24.857

The LOGISTIC Procedure



The LOGISTIC Procedure



ROC Model: ROC1

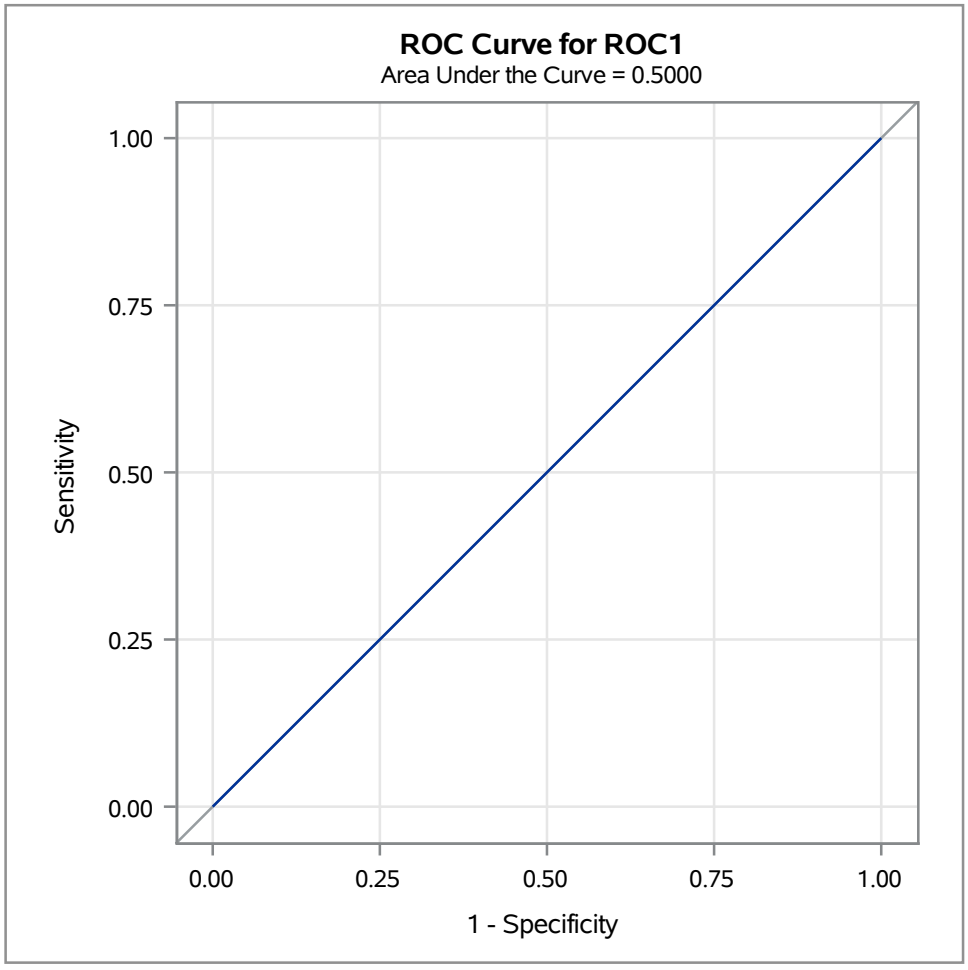
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

-2 Log L	=	4668.717

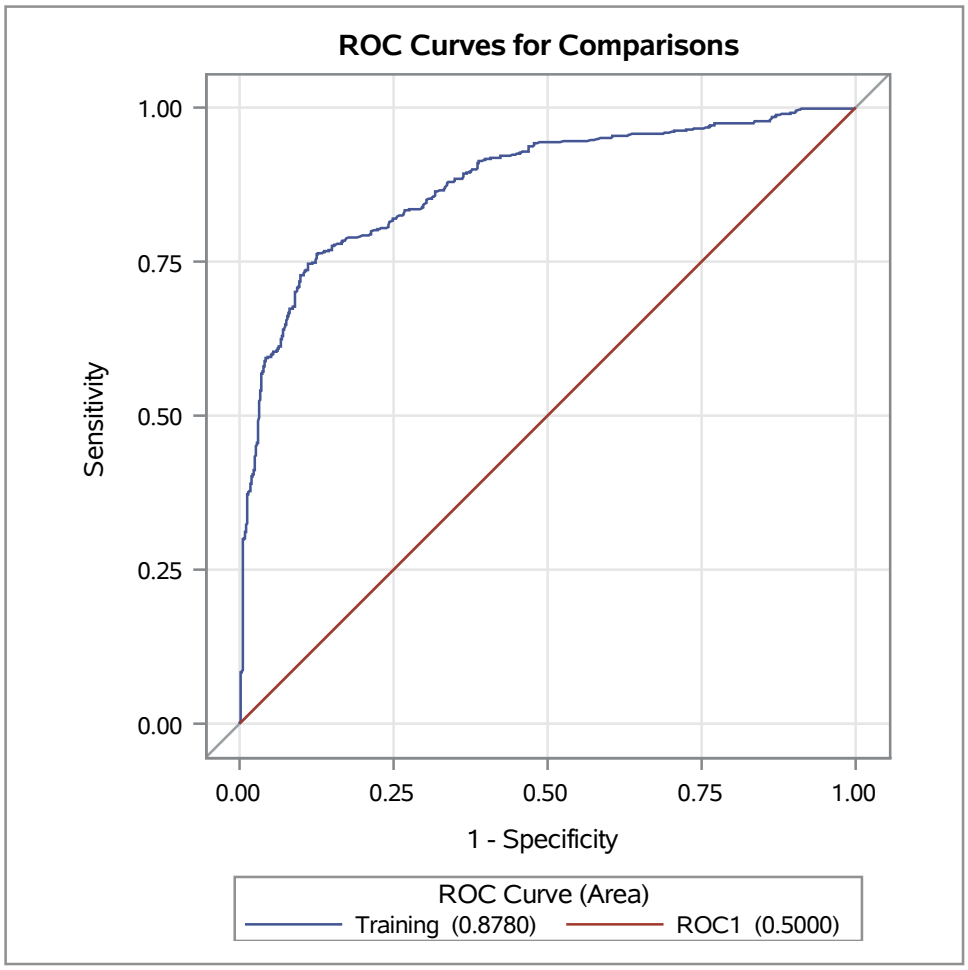
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-0.4809	0.0347	191.6027	<.0001

The LOGISTIC Procedure

ROC Model: ROC1



The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Training	0.8780	0.0102	0.8581	0.8980	0.7561	0.7563	0.3782
ROC1	0.5000	0	0.5000	0.5000	0	.	0

ROC Contrast Test Results			
Contrast	DF	Chi-Square	Pr > ChiSq
Reference = Training	1	1378.7261	<.0001

The LOGISTIC Procedure

Model Information	
Data Set	WORK.TRAINING
Response Variable	HOSPITAL
Number of Response Levels	2
Weight Variable	WEIGHT
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	1155
Number of Observations Used	1155
Sum of Weights Read	3510
Sum of Weights Used	3510

Response Profile			
Ordered Value	**HOSPITAL**	**Total Frequency**	**Total Weight**
1	0	567	2169.0000
2	1	588	1341.0000

Probability modeled is HOSPITAL='1'.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	4670.717	3330.289
SC	4675.769	3375.756
-2 Log L	4668.717	3312.289

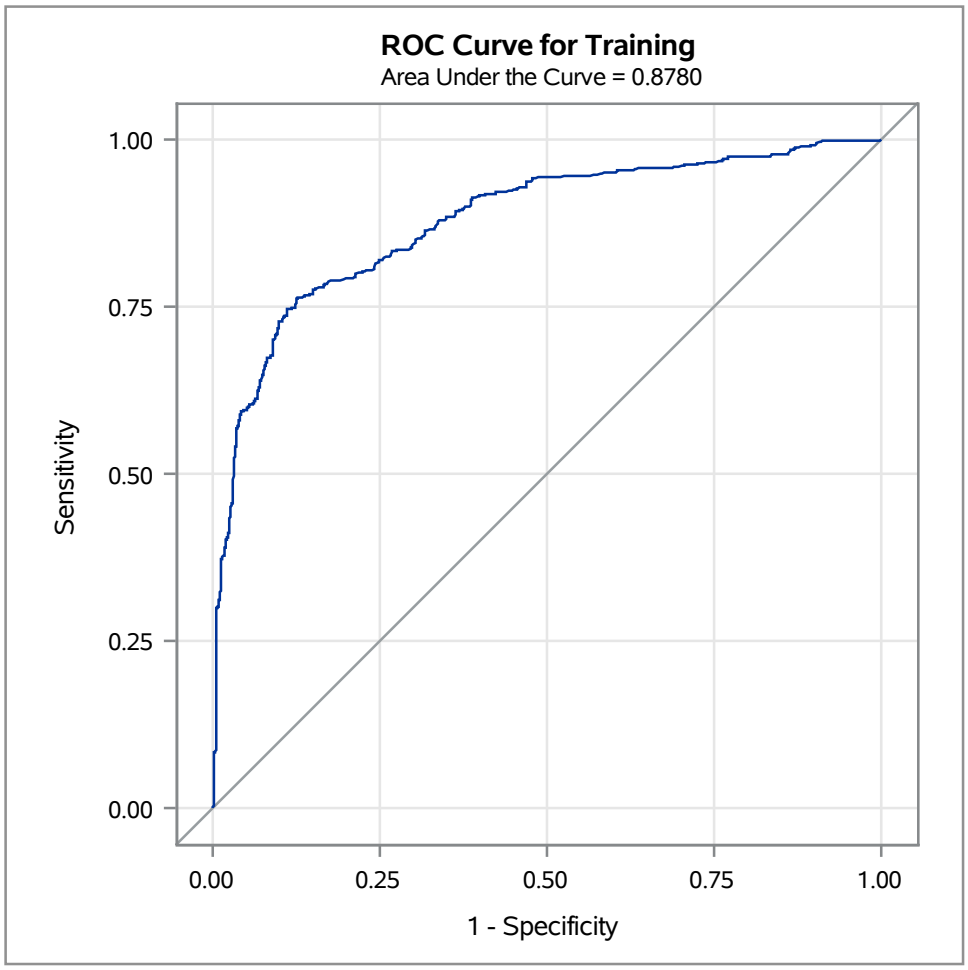
Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	1356.4278	8	<.0001
Score	1147.9990	8	<.0001
Wald	685.2433	8	<.0001

The LOGISTIC Procedure

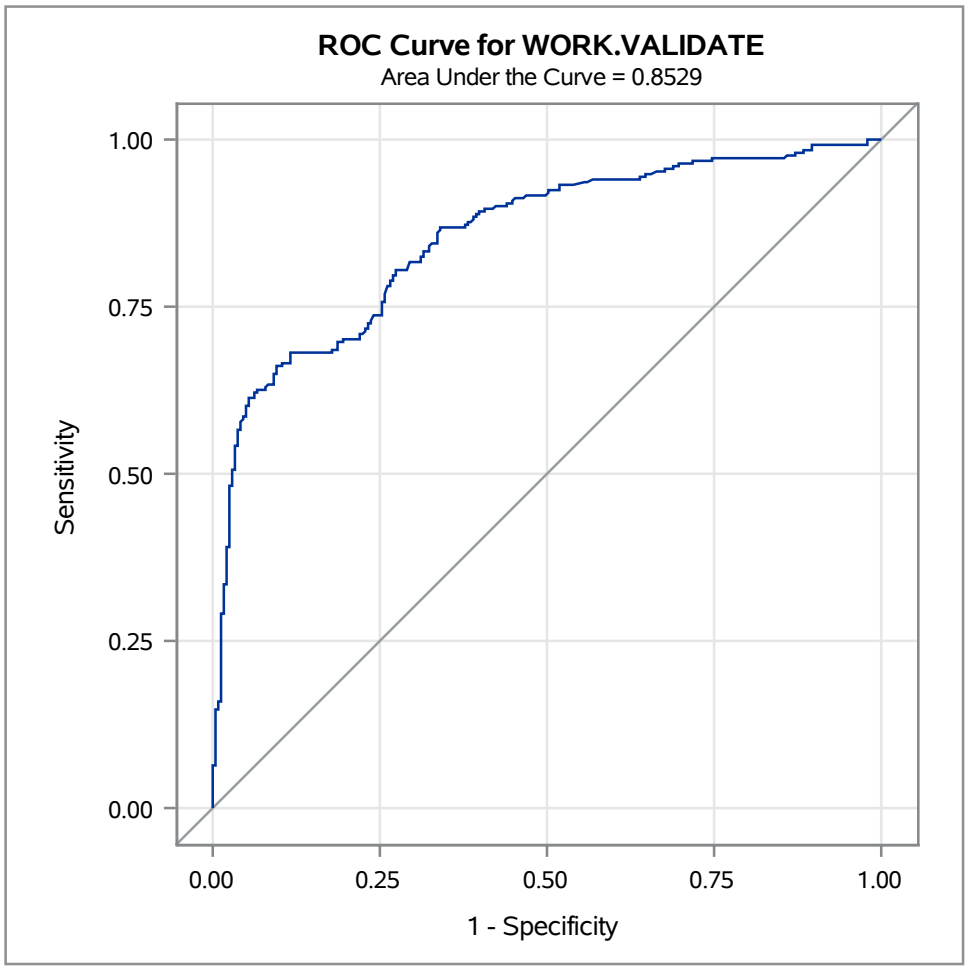
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.1101	0.1331	69.5132	<.0001
UND	1	-1.0933	0.1128	93.9653	<.0001
DISLTC8	1	2.0516	0.2517	66.4630	<.0001
DIABETES	1	0.8131	0.1074	57.3384	<.0001
RENAL	1	1.2007	0.1559	59.3029	<.0001
SST	1	-0.7378	0.0919	64.4613	<.0001
mrsafinal	1	0.8302	0.0919	81.6576	<.0001
newage	1	0.00818	0.00212	14.8212	0.0001
BSI	1	2.7088	0.2573	110.8282	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
UND	0.335	0.269	0.418
DISLTC8	7.780	4.751	12.741
DIABETES	2.255	1.827	2.783
RENAL	3.322	2.448	4.510
SST	0.478	0.399	0.573
mrsafinal	2.294	1.916	2.746
newage	1.008	1.004	1.012
BSI	15.012	9.066	24.857

The LOGISTIC Procedure



The LOGISTIC Procedure



ROC Model: ROC1

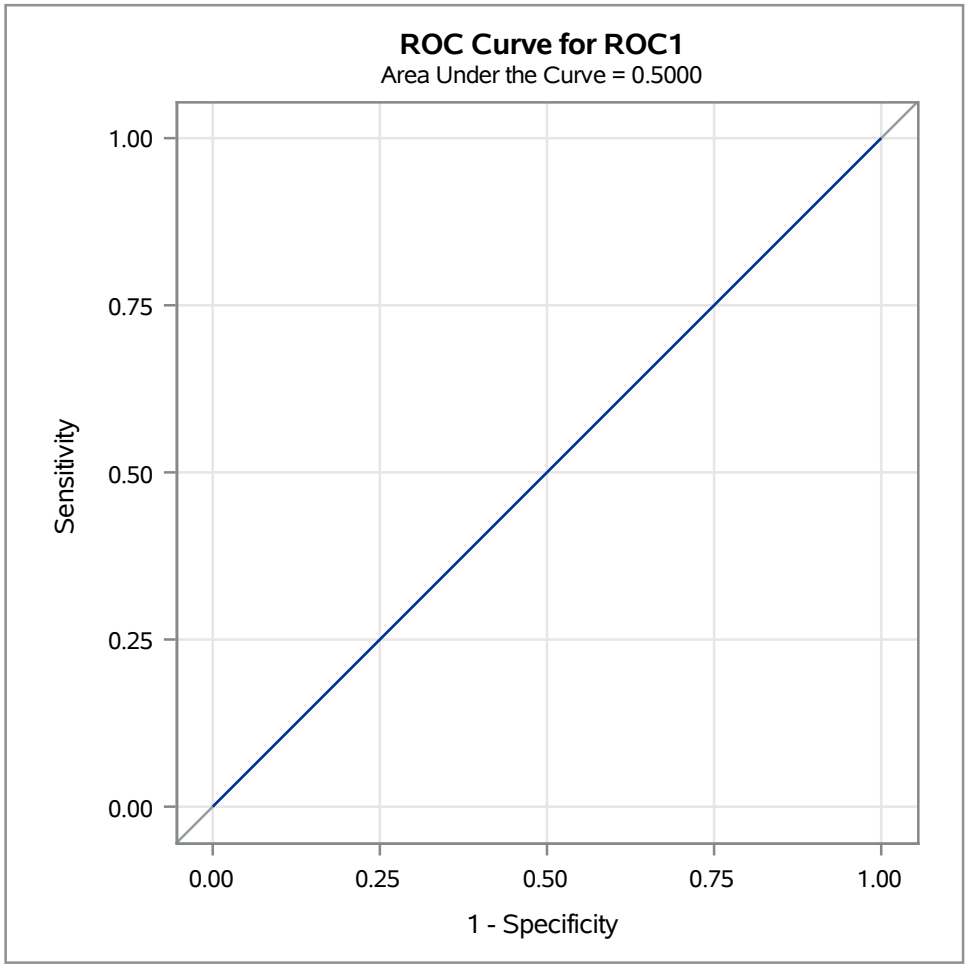
Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

-2 Log L	=	4668.717

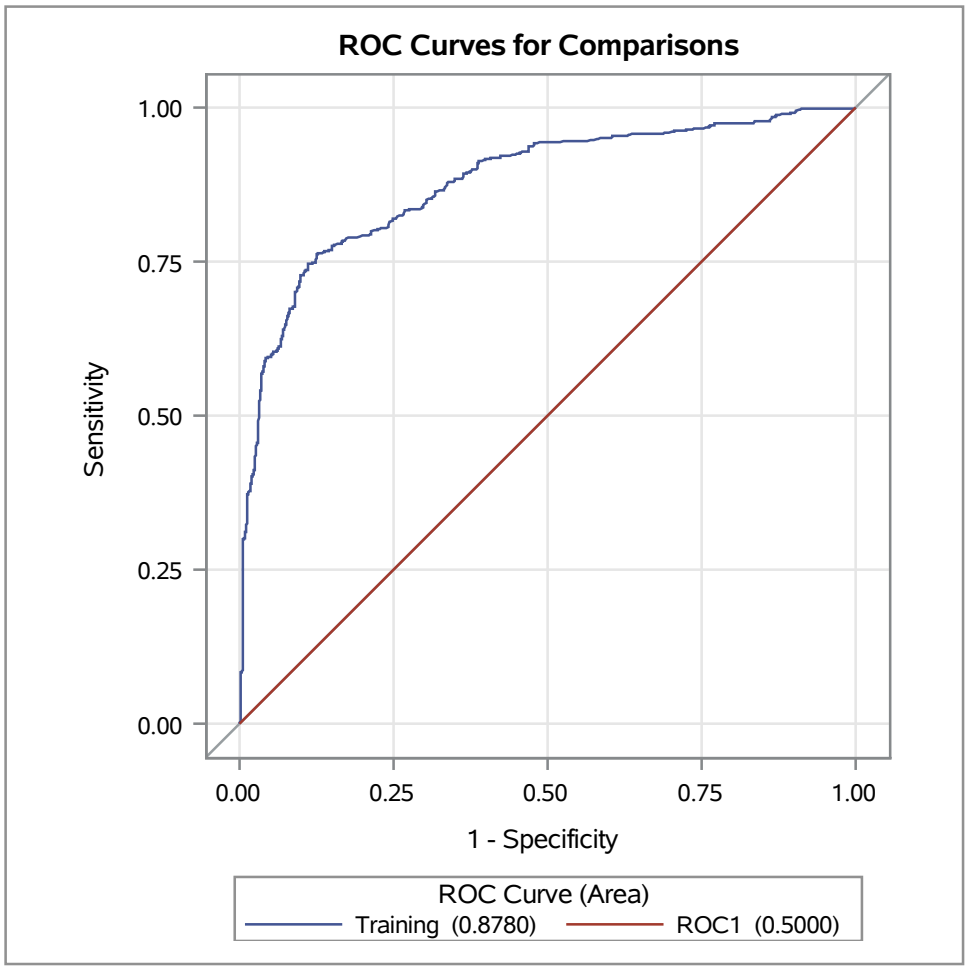
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-0.4809	0.0347	191.6027	<.0001

The LOGISTIC Procedure

ROC Model: ROC1



The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Training	0.8780	0.0102	0.8581	0.8980	0.7561	0.7563	0.3782
ROC1	0.5000	0	0.5000	0.5000	0	.	0

ROC Contrast Test Results			
Contrast	DF	Chi-Square	Pr > ChiSq
Reference = Training	1	1378.7261	<.0001