

q1

## The FREQ Procedure

Frequency Row Pct	Table of Case by ContIV_24H		
	Case(Case)	ContIV_24H(ContIV 24H)	
		1	0
1	23 50.00	23 50.00	46
0	30 15.96	158 84.04	188
Total	53	181	234
Frequency Missing = 2			

## Statistics for Table of Case by ContIV\_24H

Statistic	DF	Value	Prob
Chi-Square	1	24.4468	<.0001
Likelihood Ratio Chi-Square	1	21.5636	<.0001
Continuity Adj. Chi-Square	1	22.5423	<.0001
Mantel-Haenszel Chi-Square	1	24.3423	<.0001
Phi Coefficient		0.3232	
Contingency Coefficient		0.3076	
Cramer's V		0.3232	

Fisher's Exact Test	
Cell (1,1) Frequency (F)	23
Left-sided Pr <= F	1.0000
Right-sided Pr >= F	<.0001
Table Probability (P)	<.0001
Two-sided Pr <= P	<.0001

## Odds Ratio and Relative Risks

Statistic	Value	95% Confidence Limits	
Odds Ratio	5.2667	2.6221	10.5785
Relative Risk (Column 1)	3.1333	2.0237	4.8514
Relative Risk (Column 2)	0.5949	0.4427	0.7996

Sample Size = 234  
Frequency Missing = 2

q1

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.DATASET4	
Response Variable	Case	Case
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	236
Number of Observations Used	234

Response Profile		
Ordered Value	Case	Total Frequency
1	0	188
2	1	46

Probability modeled is Case='1'.

**Note:** 2 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information		
Class	Value	Design Variables
ContIV_24H	0	0
	1	1

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

Model Fit Statistics		

Criterion	Intercept Only	Intercept and Covariates
AIC	233.953	214.390
SC	237.408	221.300
-2 Log L	231.953	210.390

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	21.5636	1	<.0001
Score	24.4468	1	<.0001
Wald	21.7996	1	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.7996	<.0001

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-1.9271	0.2232	74.5616	<.0001
ContIV_24H	1	1	1.6614	0.3558	21.7996	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
ContIV_24H 1 vs 0	5.267	2.622	10.578

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	42.0	Somers' D	0.340
Percent Discordant	8.0	Gamma	0.681
Percent Tied	50.0	Tau-a	0.108
Pairs	8648	c	0.670



## q2-1

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.DATASET4	
Response Variable	Case	Case
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	236
Number of Observations Used	234

Response Profile		
Ordered Value	Case	Total Frequency
1	0	188
2	1	46

Probability modeled is Case='1'.

**Note:** 2 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information		
Class	Value	Design Variables
ContIV_24H	0	0
	1	1
Gender	0	0
	1	1
VAR6	0	0
	1	1

Service	0	0
	1	1
Site	0	0
	1	1

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	233.953	210.722
SC	237.408	231.454
-2 Log L	231.953	198.722

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	33.2308	5	<.0001
Score	36.1496	5	<.0001
Wald	28.7235	5	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.6211	<.0001
Gender	1	1.6968	0.1927
VAR6	1	1.3850	0.2393
Service	1	0.2593	0.6106
Site	1	8.0942	0.0044

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-2.4287	0.5489	19.5764	<.0001

<b>ContIV_24H</b>	<b>1</b>	<b>1</b>	<b>1.8306</b>	<b>0.3937</b>	<b>21.6211</b>	<b>&lt;.0001</b>
<b>Gender</b>	<b>1</b>	<b>1</b>	<b>-0.4774</b>	<b>0.3665</b>	<b>1.6968</b>	<b>0.1927</b>
<b>VAR6</b>	<b>1</b>	<b>1</b>	<b>0.4573</b>	<b>0.3886</b>	<b>1.3850</b>	<b>0.2393</b>
<b>Service</b>	<b>1</b>	<b>1</b>	<b>0.2338</b>	<b>0.4591</b>	<b>0.2593</b>	<b>0.6106</b>
<b>Site</b>	<b>1</b>	<b>1</b>	<b>1.4660</b>	<b>0.5153</b>	<b>8.0942</b>	<b>0.0044</b>

<b>Odds Ratio Estimates</b>			
<b>Effect</b>	<b>Point Estimate</b>	<b>95% Wald Confidence Limits</b>	
<b>ContIV_24H 1 vs 0</b>	6.237	2.883	13.493
<b>Gender 1 vs 0</b>	0.620	0.303	1.272
<b>VAR6 1 vs 0</b>	1.580	0.738	3.383
<b>Service 1 vs 0</b>	1.263	0.514	3.107
<b>Site 1 vs 0</b>	4.332	1.578	11.893

<b>Association of Predicted Probabilities and Observed Responses</b>			
<b>Percent Concordant</b>	70.1	<b>Somers' D</b>	0.475
<b>Percent Discordant</b>	22.6	<b>Gamma</b>	0.512
<b>Percent Tied</b>	7.3	<b>Tau-a</b>	0.151
<b>Pairs</b>	8648	<b>c</b>	0.738



## q2-2

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.DATASET4	
Response Variable	Case	Case
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	236
Number of Observations Used	234

Response Profile		
Ordered Value	Case	Total Frequency
1	0	188
2	1	46

Probability modeled is Case='1'.

**Note:** 2 observations were deleted due to missing values for the response or explanatory variables.

## Stepwise Selection Procedure

Class Level Information		
Class	Value	Design Variables
ContIV_24H	0	0
	1	1
Gender	0	0
	1	1

VAR6	0	0
	1	1
Service	0	0
	1	1
Site	0	0
	1	1

Step 0. Intercept entered:

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

-2 Log L	=	231.953
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Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-1.4078	0.1645	73.2457	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
36.1496	5	<.0001

Analysis of Effects Eligible for Entry			
Effect	DF	Score Chi-Square	Pr > ChiSq
ContIV_24H	1	24.4468	<.0001
Gender	1	1.1060	0.2929
VAR6	1	3.1524	0.0758
Service	1	0.9161	0.3385
Site	1	7.3334	0.0068

Step 1. Effect ContIV\_24H entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	233.953	214.390
SC	237.408	221.300
-2 Log L	231.953	210.390

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	21.5636	1	<.0001
Score	24.4468	1	<.0001
Wald	21.7996	1	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.7996	<.0001

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-1.9271	0.2232	74.5616	<.0001
ContIV_24H	1	1	1.6614	0.3558	21.7996	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
ContIV_24H 1 vs 0	5.267	2.622	10.578

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	42.0	Somers' D	0.340

Percent Discordant	8.0	Gamma	0.681
Percent Tied	50.0	Tau-a	0.108
Pairs	8648	c	0.670

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
12.5203	4	0.0139

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.7996	<.0001

**Note:** No effects for the model in Step 1 are removed.

Analysis of Effects Eligible for Entry			
Effect	DF	Score Chi-Square	Pr > ChiSq
Gender	1	1.5574	0.2120
VAR6	1	2.4192	0.1199
Service	1	0.0785	0.7794
Site	1	9.0647	0.0026

**Step 2. Effect Site entered:**

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	233.953	208.633
SC	237.408	218.999
-2 Log L	231.953	202.633

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	29.3198	2	<.0001
Score	32.3820	2	<.0001
Wald	26.8109	2	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	22.8220	<.0001
Site	1	8.2727	0.0040

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-2.1594	0.2525	73.1279	<.0001
ContIV_24H	1	1	1.7665	0.3698	22.8220	<.0001
Site	1	1	1.3929	0.4843	8.2727	0.0040

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
ContIV_24H 1 vs 0	5.850	2.834	12.076
Site 1 vs 0	4.027	1.559	10.403

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	52.0	Somers' D	0.409
Percent Discordant	11.1	Gamma	0.648
Percent Tied	36.9	Tau-a	0.130
Pairs	8648	c	0.705

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq

3.8167	3	0.2820
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Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	22.8220	<.0001
Site	1	8.2727	0.0040

**Note:** No effects for the model in Step 2 are removed.

Analysis of Effects Eligible for Entry			
Effect	DF	Score Chi-Square	Pr > ChiSq
Gender	1	1.9461	0.1630
VAR6	1	1.6642	0.1970
Service	1	0.8528	0.3558

**Note:** No (additional) effects met the 0.15 significance level for entry into the model.

Summary of Stepwise Selection								
Step	Effect		DF	Number In	Score Chi-Square	Wald Chi-Square	Pr > ChiSq	Variable Label
	Entered	Removed						
1	ContIV_24H		1	1	24.4468		<.0001	ContIV 24H
2	Site		1	2	9.0647		0.0026	Site

## q3-1

## The LOGISTIC Procedure

## Conditional Analysis

Model Information		
Data Set	WORK.DATASET4	
Response Variable	Case	Case
Number of Response Levels	2	
Number of Strata	46	
Model	binary logit	
Optimization Technique	Newton-Raphson ridge	

Number of Observations Read	236
Number of Observations Used	234
Number of Observations Informative	234

Response Profile		
Ordered Value	Case	Total Frequency
1	0	188
2	1	46

Probability modeled is Case='1'.

**Note:** 2 observations were deleted due to missing values for the response, explanatory, or strata variables.

Class Level Information		
Class	Value	Design Variables
ContIV_24H	0	0
	1	1
Gender	0	0

	1	1
VAR6	0	0
	1	1
Service	0	0
	1	1
Site	0	0
	1	1

Strata Summary					
Response Pattern	Case		Number of Strata		Frequency
	0	1			
1	2	1	1		3
2	3	1	1		4
3	4	1	39		195
4	5	1	3		18
5	6	1	2		14

### Newton-Raphson Ridge Optimization

#### Without Parameter Scaling

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

Model Fit Statistics		
Criterion	Without Covariates	With Covariates
AIC	149.040	119.548
SC	149.040	136.824
-2 Log L	149.040	109.548

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	39.4923	5	<.0001



<b>Score</b>	41.3544	5	<.0001
<b>Wald</b>	26.3132	5	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	18.8240	<.0001
Gender	1	3.2629	0.0709
VAR6	1	0.6022	0.4378
Service	1	0.0623	0.8029
Site	1	10.7797	0.0010

Analysis of Conditional Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	1	2.1565	0.4970	18.8240	<.0001
Gender	1	1	-0.7395	0.4094	3.2629	0.0709
VAR6	1	1	0.3445	0.4440	0.6022	0.4378
Service	1	1	-0.1883	0.7544	0.0623	0.8029
Site	1	1	2.2329	0.6801	10.7797	0.0010

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
ContIV_24H 1 vs 0	8.641	3.262	22.890
Gender 1 vs 0	0.477	0.214	1.065
VAR6 1 vs 0	1.411	0.591	3.370
Service 1 vs 0	0.828	0.189	3.634
Site 1 vs 0	9.327	2.460	35.372

## q3-2

## The LOGISTIC Procedure

## Conditional Analysis

Model Information		
Data Set	WORK.DATASET4	
Response Variable	Case	Case
Number of Response Levels	2	
Number of Strata	46	
Model	binary logit	
Optimization Technique	Newton-Raphson ridge	

Number of Observations Read	236
Number of Observations Used	234
Number of Observations Informative	234

Response Profile		
Ordered Value	Case	Total Frequency
1	0	188
2	1	46

Probability modeled is Case='1'.

**Note:** 2 observations were deleted due to missing values for the response, explanatory, or strata variables.

## Stepwise Selection Procedure

Class Level Information		
Class	Value	Design Variables
ContIV_24H	0	0

	1	1
Gender	0	0
	1	1
VAR6	0	0
	1	1
Service	0	0
	1	1
Site	0	0
	1	1

Strata Summary				
Response Pattern	Case		Number of Strata	Frequency
	0	1		
1	2	1	1	3
2	3	1	1	4
3	4	1	39	195
4	5	1	3	18
5	6	1	2	14

Step 0. No covariates.

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
41.3544	5	<.0001

Analysis of Effects Eligible for Entry			
Effect	DF	Score Chi-Square	Pr > ChiSq
ContIV_24H	1	26.6367	<.0001
Gender	1	1.4072	0.2355
VAR6	1	3.5435	0.0598
Service	1	1.6203	0.2030

Site	1	12.0059	0.0005
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Step 1. Effect ContIV\_24H entered:

### Newton-Raphson Ridge Optimization

#### Without Parameter Scaling

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

Model Fit Statistics		
Criterion	Without Covariates	With Covariates
AIC	149.040	127.355
SC	149.040	130.811
-2 Log L	149.040	125.355

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	23.6848	1	<.0001
Score	26.6367	1	<.0001
Wald	21.3727	1	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.3727	<.0001

Analysis of Conditional Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	1	1.8964	0.4102	21.3727	<.0001

Odds Ratio Estimates		
		95% Wald

Effect	Point Estimate	Confidence Limits	
ContIV_24H 1 vs 0	6.662	2.981	14.886

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
17.2729	4	0.0017

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.3727	<.0001

**Note:** No effects for the model in Step 1 are removed.

Analysis of Effects Eligible for Entry			
Effect	DF	Score Chi-Square	Pr > ChiSq
Gender	1	3.2427	0.0717
VAR6	1	1.3935	0.2378
Service	1	0.0295	0.8636
Site	1	13.8154	0.0002

**Step 2. Effect Site entered:**

**Newton-Raphson Ridge Optimization**

**Without Parameter Scaling**

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

Model Fit Statistics		
Criterion	Without Covariates	With Covariates
AIC	149.040	117.620

SC	149.040	124.531
-2 Log L	149.040	113.620

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	35.4201	2	<.0001
Score	37.5435	2	<.0001
Wald	25.0780	2	<.0001

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.1504	<.0001
Site	1	11.2104	0.0008

Analysis of Conditional Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	1	2.1212	0.4612	21.1504	<.0001
Site	1	1	2.2118	0.6606	11.2104	0.0008

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
ContIV_24H 1 vs 0	8.341	3.378	20.598
Site 1 vs 0	9.133	2.502	33.335

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
4.0014	3	0.2613

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.1504	<.0001

Site	1	11.2104	0.0008
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**Note:** No effects for the model in Step 2 are removed.

Analysis of Effects Eligible for Entry			
Effect	DF	Score Chi-Square	Pr > ChiSq
Gender	1	3.4128	0.0647
VAR6	1	0.6149	0.4329
Service	1	0.0174	0.8950

**Step 3. Effect Gender entered:**

**Newton-Raphson Ridge Optimization**

**Without Parameter Scaling**

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

Model Fit Statistics		
Criterion	Without Covariates	With Covariates
AIC	149.040	116.175
SC	149.040	126.541
-2 Log L	149.040	110.175

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	38.8647	3	<.0001
Score	40.4500	3	<.0001
Wald	26.3030	3	<.0001

Type 3 Analysis of Effects			
		Wald	

Effect	DF	Chi-Square	Pr > ChiSq
ContIV_24H	1	21.9037	<.0001
Gender	1	3.3241	0.0683
Site	1	11.4055	0.0007

Analysis of Conditional Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	1	2.2509	0.4810	21.9037	<.0001
Gender	1	1	-0.7446	0.4084	3.3241	0.0683
Site	1	1	2.2630	0.6701	11.4055	0.0007

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
ContIV_24H 1 vs 0	9.496	3.700	24.375
Gender 1 vs 0	0.475	0.213	1.057
Site 1 vs 0	9.612	2.585	35.743

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
0.6215	2	0.7329

Analysis of Effects Eligible for Removal			
Effect	DF	Wald Chi-Square	Pr > ChiSq
ContIV_24H	1	21.9037	<.0001
Gender	1	3.3241	0.0683
Site	1	11.4055	0.0007

**Note:** No effects for the model in Step 3 are removed.

Analysis of Effects Eligible for Entry			
		Score	



Effect	DF	Chi-Square	Pr > ChiSq
VAR6	1	0.5604	0.4541
Service	1	0.0167	0.8973

**Note:** No (additional) effects met the 0.15 significance level for entry into the model.

Summary of Stepwise Selection								
Step	Effect		DF	Number In	Score Chi-Square	Wald Chi-Square	Pr > ChiSq	Variable Label
	Entered	Removed						
1	ContIV_24H		1	1	26.6367		<.0001	ContIV 24H
2	Site		1	2	13.8154		0.0002	Site
3	Gender		1	3	3.4128		0.0647	Gender