

Surgery

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```
## Warning: package 'caTools' was built under R version 4.1.3
```

```
#Generalized Linear Model
```

```
## Warning: glm.fit: fitted probabilities numerically 0 or 1 occurred
```

```
##
```

```
## Call:
```

```
## glm(formula = Risk1Yr ~ DGN + PRE4 + PRE5 + PRE7 + PRE8 + PRE9 +  
##     PRE10 + PRE11 + PRE14 + PRE17 + PRE19 + PRE25 + PRE30 + PRE32 +  
##     AGE, family = binomial(), data = surgery_training)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -1.5492  -0.4729  -0.4013  -0.1333   2.4375
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error z value Pr(>|z|)  
## (Intercept) -18.92498 3956.18101  -0.005  0.99618  
## DGNDGN2      15.31467 3956.18043   0.004  0.99691  
## DGNDGN3      15.45367 3956.18038   0.004  0.99688  
## DGNDGN4      14.94343 3956.18045   0.004  0.99699  
## DGNDGN5      18.37253 3956.18045   0.005  0.99629  
## DGNDGN6       1.03555 4516.80991   0.000  0.99982  
## DGNDGN8       2.50717 5594.88400   0.000  0.99964  
## PRE4          0.10914   0.51190   0.213  0.83117  
## PRE5         -0.34224   0.59243  -0.578  0.56347  
## PRE7T         0.69537   0.82621   0.842  0.39999  
## PRE8T         0.15447   0.61162   0.253  0.80061  
## PRE9T         1.89147   0.70342   2.689  0.00717 **  
## PRE10T        -0.16896   0.48719  -0.347  0.72873  
## PRE11T         0.23354   0.51511   0.453  0.65028  
## PRE140C12      0.37230   0.46260   0.805  0.42093  
## PRE140C13      0.41772   0.96271   0.434  0.66436  
## PRE140C14      1.93607   0.89510   2.163  0.03054 *  
## PRE17T         0.95645   0.61299   1.560  0.11869  
## PRE19T       -15.49146 2769.73682  -0.006  0.99554  
## PRE25T       -16.31404 1497.11660  -0.011  0.99131  
## PRE30T         2.39677   1.01779   2.355  0.01853 *  
## PRE32T       -14.92813 2543.82797  -0.006  0.99532  
## AGE          -0.01398   0.02483  -0.563  0.57342
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 217.37  on 304  degrees of freedom
## Residual deviance: 179.04  on 282  degrees of freedom
## AIC: 225.04
##
## Number of Fisher Scoring iterations: 16
```

The factors that are the most significant in the model are PRE4, PRE9, PRE14 and PRE17. These are the only factors with a P value less than 0.05

Confidence Matrix

```
##              Predicted_Value
## Actual_Value FALSE TRUE
##           F    126    4
##           T     32    3
```

Accuracy

```
## [1] 0.7818182
```