

# RREACT Overdose Analysis

2022-11-18

## Introduction

This data set contains statistics for individuals who suffer from a substance use disorder during the time frame of January 1, 2020 to November 17, 2022. The data set contains 35 variables and 11,501 rows of patient data. This data set contains both quantitative and qualitative variables. After performing an exploratory data analysis on the data set, it is evident that there are 8 duplicated rows which will be removed from the data set. There are 11,500 null values for the column **Primary Impression (NEMSIS)** and 11,501 null values for the column **Secondary Impression (NEMSIS)**, so these columns will be removed from the data set. In addition, the rows where the **Medic Unit** is “REACT1” or “RREACT 1”, will be removed as they do not indicate an overdose transport. The goal of this analysis report is to predict whether or not an individual who suffered from a substance use disorder refuses or accepts a transport to a hospital.

## Overdose Data

Attribute Name	Description	Type of Data
Contact Start Date/Time	Start date and time of the event	Nominal
Contact End Date/Time	End date and time of the event	Interval
Patient ID	ID of the patient	Interval
Patient Funding Source	Funding source of the patient	Nominal
Original Referral Source	Referral source of the patient	Nominal
Date of Birth	Date of birth of the patient	Interval
Age	Age of the patient	Interval
Gender	Gender of the patient	Nominal
Race/Ethnicity	Race/Ethnicity of the patient	Nominal
Demographics_Ethnicity	Demographics ethnicity of the patient	Nominal
Homeless	Whether the patient is homeless or not	Nominal
Precinct # of the Primary Address	Zone # of the primary address	Nominal
Priority Address for Outreach	Priority address for the patient	Nominal
Do Not Contact?	Whether the address is dangerous or not	Nominal
Possible Warrants	Determines if the patient has warrants	Nominal
Suspected Human Trafficking?	Determines if the patient is suspected of Human Trafficking	Nominal
Suspected Narcotics Activity?	Determines if the patient is suspected of narcotics activity	Nominal
Shift	Shift of the response unit	Nominal
Medic Unit	Medic unit of the unit at the incident	Nominal
Primary Impression	Primary Impression of the incident	Nominal
Secondary Impression	Secondary Impression of the incident	Nominal
EMD Complaint	EMD complaint	Nominal
Disposition	Disposition of the incident	Nominal
Alcohol/Drugs	Whether alcohol or drugs were involved in the incident	Nominal
Naloxone	Whether naloxone was given during the incident	Nominal
Loss of Consciousness	Did the patient lose consciousness?	Nominal
Refusal or Transport?	Did the patient refuse the transport to the hospital?	Nominal

Attribute Name	Description	Type of Data
Date & Time of Transport	Date & Time of the transport	Interval
Incident Address	Address of the overdose incident	Nominal

Looking at the box plot of Age, there are no obvious outliers, therefore, no rows will be removed.

## Training/Testing the Data

In order to model the data, the data set will be split into a training and testing data set. The training data set will be 70% of the original data set and the testing data set will be the remaining 30%. Since **Secondary Impression** could potentially be highly correlated with **Primary Impression** this could cause collinearity as well as having 9,974 null values, over half the number of rows, this variable will be removed from the data set. Another variable that will be eliminated is **Disposition** as this directly correlates to the response variable.

```
set.seed(100)
sample <- sample.split(Overdose_Statistics$Age, SplitRatio = 0.7)
train = subset(Overdose_Statistics, sample == TRUE)
test = subset(Overdose_Statistics, sample == FALSE)
train$RefusalOrTransport= as.factor(train$`Refusal or Transport?`)
test$`Refusal or Transport?`= as.factor(test$`Refusal or Transport?`)
```

The first model that will be fitted is the Generalized linear model, using the family, binomial. The following variables were used as explanatory variables:

- Patient Funding Source
- Original Referral Source
- Gender, Race/Ethnicity
- Demographics\_Ethnicity
- Homeless
- Precinit # of the Primary Address
- Do Not Contact?
- Possible Warrants?
- Suspected Human Trafficking?
- Suspected Narcotics Activity?
- Shift
- Medic Unit
- Primary Impression
- EMD Complaint
- Alcohol / Drugs?
- Naloxone Given?
- Loss of Consciousness?

Based on the summary of the model, the following variables were significant in predicting the response variable:

- Homeless
- Possible Warrants?
- Shift
- Alcohol / Drugs?

```
##
## Call:
## glm(formula = RefusalOrTransport ~ 'Patient Funding Source' +
##      'Original Referral Source' + Gender + 'Race/Ethnicity' +
```

```

## Demographics_Ethnicity + Homeless + 'Precinct # of the Primary Address' +
## 'Do Not Contact?' + 'Possible Warrants?' + 'Suspected Human Trafficking?' +
## 'Suspected Narcotics Activity?' + Shift + 'Medic Unit' +
## 'Primary Impression' + 'EMD Complaint' + 'Alcohol / Drugs?' +
## 'Naloxone Given?' + 'Loss of Consciousness?' + Age, family = "binomial",
## data = train, weights = na.action(na.pass))
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -3.0853   0.0000   0.3443   0.6702   2.1188
##
## Coefficients: (4 not defined because of singularities)
##                                     Estimate
## (Intercept)                        2.334e+13
## 'Patient Funding Source'BJA; SAMHSA -2.334e+13
## 'Patient Funding Source'BJA; SAMHSA; CDC -2.334e+13
## 'Original Referral Source'Call / Text    5.210e+01
## 'Original Referral Source'CD of Fire     5.194e+01
## 'Original Referral Source'Encounter      5.221e+01
## 'Original Referral Source'ESO (CFD Overdose Incident Report) 2.924e+01
## 'Original Referral Source'Event Outreach 5.347e+01
## 'Original Referral Source'Other          5.100e+01
## 'Original Referral Source'Township       2.932e+01
## GenderMale                             1.927e-02
## GenderNot Provided                     2.305e+01
## GenderUnknown                          -3.216e-03
## 'Race/Ethnicity'Black or African American 2.305e+01
## 'Race/Ethnicity'Hispanic or Latino       2.278e+01
## 'Race/Ethnicity'Native Hawaiian or Other Pacific Islander 4.644e+01
## 'Race/Ethnicity'Other                   2.139e+01
## 'Race/Ethnicity'Unknown                 2.310e+01
## 'Race/Ethnicity'White                   2.256e+01
## Demographics_EthnicityNot Hispanic or Latino NA
## Demographics_EthnicityUnknown           NA
## HomelessYes                             6.188e-01
## 'Precinct # of the Primary Address'Zone 2 -2.268e-01
## 'Precinct # of the Primary Address'Zone 3 -1.828e-01
## 'Precinct # of the Primary Address'Zone 4 -1.401e-01
## 'Precinct # of the Primary Address'Zone 5 -6.236e-01
## 'Do Not Contact?'Unknown               -1.059e+00
## 'Do Not Contact?'Yes                   -1.177e-01
## 'Possible Warrants?'Unknown            1.619e-01
## 'Possible Warrants?'Yes                8.484e-01
## 'Suspected Human Trafficking?'Unknown  2.382e-01
## 'Suspected Human Trafficking?'Yes      1.169e-01
## 'Suspected Narcotics Activity?'Unknown  8.036e-01
## 'Suspected Narcotics Activity?'Yes     -7.185e-01
## Shift2 Unit                           4.204e-01
## Shift3 Unit                           1.510e-01
## 'Medic Unit'E10                       -1.016e+02
## 'Medic Unit'E11                       -2.454e+01
## 'Medic Unit'E12                       -5.138e+01
## 'Medic Unit'E14                       -5.330e+01
## 'Medic Unit'E15                       -5.326e+01

```

## 'Medic Unit'E16	-5.323e+01
## 'Medic Unit'E17	-2.698e+01
## 'Medic Unit'E18	-2.701e+01
## 'Medic Unit'E21	-5.305e+01
## 'Medic Unit'E22	-5.242e+01
## 'Medic Unit'E23	-5.360e+01
## 'Medic Unit'E25	-5.305e+01
## 'Medic Unit'E26	-5.407e+01
## 'Medic Unit'E27	-5.405e+01
## 'Medic Unit'E29	-2.357e+01
## 'Medic Unit'E3	-5.143e+01
## 'Medic Unit'E32	-5.207e+01
## 'Medic Unit'E4	-5.080e+01
## 'Medic Unit'E6	-7.465e+01
## 'Medic Unit'E8	-5.333e+01
## 'Medic Unit'M1	-2.245e+01
## 'Medic Unit'M10	-2.314e+01
## 'Medic Unit'M11	-2.509e+01
## 'Medic Unit'm12	-7.671e+01
## 'Medic Unit'M12	-2.397e+01
## 'Medic Unit'M13	-2.450e+01
## 'Medic Unit'M14	-2.355e+01
## 'Medic Unit'M15	-2.368e+01
## 'Medic Unit'M16	-2.404e+01
## 'Medic Unit'M17	-2.355e+01
## 'Medic Unit'M18	-2.437e+01
## 'Medic Unit'M19	-2.219e+01
## 'Medic Unit'M2	-2.418e+01
## 'Medic Unit'M20	-2.398e+01
## 'Medic Unit'M21	-2.368e+01
## 'Medic Unit'M22	-2.494e+01
## 'Medic Unit'M23	-2.373e+01
## 'Medic Unit'M24	-2.254e+01
## 'Medic Unit'M25	2.109e+01
## 'Medic Unit'M26	-2.336e+01
## 'Medic Unit'M27	-9.123e-01
## 'Medic Unit'M28	-2.459e+01
## 'Medic Unit'M29	-1.426e-01
## 'Medic Unit'M3	-2.373e+01
## 'Medic Unit'M30	1.053e-01
## 'Medic Unit'M31	-2.324e+01
## 'Medic Unit'M32	-2.305e+01
## 'Medic Unit'M33	-2.177e+01
## 'Medic Unit'M34	3.879e-01
## 'Medic Unit'M35	-2.529e+01
## 'Medic Unit'M4	-2.501e+01
## 'Medic Unit'M5	-2.413e+01
## 'Medic Unit'M6	-2.416e+01
## 'Medic Unit'M7	-2.282e+01
## 'Medic Unit'M8	-2.224e+01
## 'Medic Unit'M806	-2.356e+01
## 'Medic Unit'M815	-2.400e+01
## 'Medic Unit'M817	-2.427e+01
## 'Medic Unit'M823	-2.199e+01

## 'Medic Unit'M849	-1.022e+02
## 'Medic Unit'M890	-2.326e+01
## 'Medic Unit'medic 817	-4.821e+01
## 'Primary Impression'Acute Respiratory Distress (Dyspnea)	-1.304e+00
## 'Primary Impression'Alcohol use	-2.237e+01
## 'Primary Impression'Altered Mental Status	-2.286e+01
## 'Primary Impression'Back Pain	-1.780e+00
## 'Primary Impression'Behavioral/psychiatric episode	-2.420e+01
## 'Primary Impression'Cardiac arrest	1.016e+00
## 'Primary Impression'Cardiac arrhythmia/dysrhythmia	1.202e+00
## 'Primary Impression'Chest pain on breathing	-8.027e-01
## 'Primary Impression'Cocaine related disorders	-5.296e+01
## 'Primary Impression'Common Cold	1.478e+00
## 'Primary Impression'Confusion/Delirium	-3.694e+00
## 'Primary Impression'Diabetic Hyperglycemia	-8.823e-01
## 'Primary Impression'Extremity Pain	-9.629e-01
## 'Primary Impression'Fatigue	-5.355e+01
## 'Primary Impression'Fever	-2.600e+01
## 'Primary Impression'Generalized Weakness	-1.916e+00
## 'Primary Impression'Hypoglycemia (Not Diabetic)	4.905e-01
## 'Primary Impression'Hypothermia	9.762e-01
## 'Primary Impression'Injury	-2.334e-01
## 'Primary Impression'Injury of Head	1.963e+00
## 'Primary Impression'Malaise	-2.449e+01
## 'Primary Impression'No Complaints or Injury/Illness Noted	-2.696e+01
## 'Primary Impression'Opioid related disorders	-2.402e+01
## 'Primary Impression'Overdose - Alcohol	8.781e-02
## 'Primary Impression'Overdose - Amphetamine	-1.540e-03
## 'Primary Impression'Overdose - Benzodiazepine	-1.441e-01
## 'Primary Impression'Overdose - Cannabis	-1.009e+00
## 'Primary Impression'Overdose - Cocaine	7.202e-01
## 'Primary Impression'Overdose - Hallucinogens	4.313e-01
## 'Primary Impression'Overdose - Heroin	-2.435e+01
## 'Primary Impression'Overdose - Methadone	-2.456e+01
## 'Primary Impression'Overdose - Opium	-2.386e+01
## 'Primary Impression'Overdose - Other opioids	-2.392e+01
## 'Primary Impression'Overdose - Synthetic marijuana	-8.151e-01
## 'Primary Impression'Overdose - Synthetic narcotics	-2.419e+01
## 'Primary Impression'Overdose - Unspecified	-2.325e+01
## 'Primary Impression'Poisoning / Drug Ingestion	-2.434e+01
## 'Primary Impression'Seizures	7.875e-01
## 'Primary Impression'Septic Shock	2.528e+01
## 'Primary Impression'Stroke	-8.607e-01
## 'Primary Impression'Substance abuse	-2.439e+01
## 'Primary Impression'Suicidal Ideation	-6.766e-01
## 'Primary Impression'Suicide attempt	2.382e-01
## 'Primary Impression'Syncope / Fainting	-5.458e+01
## 'EMD Complaint'ALLERGIC REACTION	1.968e+00
## 'EMD Complaint'Altered Mental Status	-5.165e-01
## 'EMD Complaint'auto accident	-1.221e+00
## 'EMD Complaint'AUTO ACCIDENT	6.480e-01
## 'EMD Complaint'CARDIAC ARREST	-2.467e+01
## 'EMD Complaint'CHEST PAINS	-2.395e+01
## 'EMD Complaint'CONCIOUS OVERDOSE	1.945e+00

## 'EMD Complaint'	CONSCIOUS OVERDOSE	-2.323e+01
## 'EMD Complaint'	CONTAGIOUS EMERGENCY	-2.224e+01
## 'EMD Complaint'	DIABETIC EMERGENCY	-1.012e+00
## 'EMD Complaint'	difficulty breathing	NA
## 'EMD Complaint'	DIFFICULTY BREATHING	-2.330e+01
## 'EMD Complaint'	F21044716	-4.894e+01
## 'EMD Complaint'	HEAD INJURY	-5.219e+01
## 'EMD Complaint'	ill	-2.505e+01
## 'EMD Complaint'	ILL PERSON	-2.229e+01
## 'EMD Complaint'	INJURED FROM A FALL	-2.529e+01
## 'EMD Complaint'	INJURED FROM ASSAULT	-2.473e+01
## 'EMD Complaint'	INJURED PERSON	-2.470e+01
## 'EMD Complaint'	Injury of Shoulder or Upper Arm/SEIZURE	-2.460e+01
## 'EMD Complaint'	MEDIC RUN	-2.394e+01
## 'EMD Complaint'	MOTORCYCLE ACCIDENT	-2.299e+01
## 'EMD Complaint'	Multiple open sores	NA
## 'EMD Complaint'	OBSTETRICS	-2.432e+01
## 'EMD Complaint'	OD	-3.164e-02
## 'EMD Complaint'	Overdose	-1.716e+00
## 'EMD Complaint'	PERSON BURNED	-5.022e+01
## 'EMD Complaint'	PERSON DOWN	-2.262e+01
## 'EMD Complaint'	POISONING	1.245e-01
## 'EMD Complaint'	POSSIBLE DOA	2.682e+01
## 'EMD Complaint'	POSSIBLE STROKE	1.860e+00
## 'EMD Complaint'	POSSIBLE STROKE PARTIAL EVIDENCE	-2.334e+13
## 'EMD Complaint'	PSYCHIATRIC PROBLEMS	3.309e-01
## 'EMD Complaint'	SEIZURE	-2.392e+01
## 'EMD Complaint'	SHOOTING	-2.216e+01
## 'EMD Complaint'	Suicide Attempt	-2.695e+01
## 'EMD Complaint'	SUICIDE ATTEMPT	-2.437e+01
## 'EMD Complaint'	TIA/CVA	-2.215e+01
## 'EMD Complaint'	Traffic Accident	7.656e+00
## 'EMD Complaint'	unconscious overdose	2.251e+00
## 'EMD Complaint'	UNCONSCIOUS OVERDOSE	-2.335e+01
## 'EMD Complaint'	Unconscious Person	-3.533e+00
## 'EMD Complaint'	UNCONSCIOUS PERSON	-2.328e+01
## 'EMD Complaint'	UNOCONSCIOUS PERSON	-2.258e+01
## 'EMD Complaint'	VEHICLE ACCIDENT	-2.249e+01
## 'EMD Complaint'	VHS	9.032e-01
## 'Alcohol / Drugs?'	No Data	1.850e+00
## 'Alcohol / Drugs?'	None Reported	2.487e+00
## 'Alcohol / Drugs?'	Patient Admits to Alcohol Use	2.732e+01
## 'Alcohol / Drugs?'	Patient Admits to Drug Use	4.426e+00
## 'Alcohol / Drugs?'	Smell of Alcohol on Breath	2.549e+01
## 'Alcohol / Drugs?'	Unknown	2.763e+01
## 'Naloxone Given?'	Unknown	-6.286e-01
## 'Naloxone Given?'	Yes	3.865e-02
## 'Loss of Consciousness?'	Unknown	2.208e-01
## 'Loss of Consciousness?'	Yes	-4.107e-01
## Age		-1.363e-03
##		Std. Error z value
## (Intercept)		3.064e+14 0.076
## 'Patient Funding Source'	BJA; SAMHSA	3.064e+14 -0.076
## 'Patient Funding Source'	BJA; SAMHSA; CDC	3.064e+14 -0.076

## 'Original Referral Source'Call / Text	4.355e+05	0.000
## 'Original Referral Source'CD of Fire	4.326e+05	0.000
## 'Original Referral Source'Encounter	4.632e+05	0.000
## 'Original Referral Source'ESO (CFD Overdose Incident Report)	4.084e+05	0.000
## 'Original Referral Source'Event Outreach	4.637e+05	0.000
## 'Original Referral Source'Other	4.820e+05	0.000
## 'Original Referral Source'Township	4.084e+05	0.000
## GenderMale	2.004e-01	0.096
## GenderNot Provided	2.180e+05	0.000
## GenderUnknown	1.259e+00	-0.003
## 'Race/Ethnicity'Black or African American	1.417e+05	0.000
## 'Race/Ethnicity'Hispanic or Latino	1.417e+05	0.000
## 'Race/Ethnicity'Native Hawaiian or Other Pacific Islander	2.594e+05	0.000
## 'Race/Ethnicity'Other	1.417e+05	0.000
## 'Race/Ethnicity'Unknown	1.417e+05	0.000
## 'Race/Ethnicity'White	1.417e+05	0.000
## Demographics_EthnicityNot Hispanic or Latino	NA	NA
## Demographics_EthnicityUnknown	NA	NA
## HomelessYes	3.344e-01	1.850
## 'Precinct # of the Primary Address'Zone 2	3.889e-01	-0.583
## 'Precinct # of the Primary Address'Zone 3	3.854e-01	-0.474
## 'Precinct # of the Primary Address'Zone 4	4.293e-01	-0.326
## 'Precinct # of the Primary Address'Zone 5	3.774e-01	-1.652
## 'Do Not Contact?'Unknown	7.478e-01	-1.416
## 'Do Not Contact?'Yes	3.072e-01	-0.383
## 'Possible Warrants?'Unknown	2.161e-01	0.749
## 'Possible Warrants?'Yes	4.240e-01	2.001
## 'Suspected Human Trafficking?'Unknown	7.930e-01	0.300
## 'Suspected Human Trafficking?'Yes	1.008e+00	0.116
## 'Suspected Narcotics Activity?'Unknown	9.219e-01	0.872
## 'Suspected Narcotics Activity?'Yes	8.767e-01	-0.820
## Shift2 Unit	2.379e-01	1.767
## Shift3 Unit	2.290e-01	0.659
## 'Medic Unit'E10	5.002e+05	0.000
## 'Medic Unit'E11	6.523e+05	0.000
## 'Medic Unit'E12	3.480e+05	0.000
## 'Medic Unit'E14	3.112e+05	0.000
## 'Medic Unit'E15	5.397e+05	0.000
## 'Medic Unit'E16	3.644e+05	0.000
## 'Medic Unit'E17	2.215e+05	0.000
## 'Medic Unit'E18	2.215e+05	0.000
## 'Medic Unit'E21	6.191e+05	0.000
## 'Medic Unit'E22	6.256e+05	0.000
## 'Medic Unit'E23	5.432e+05	0.000
## 'Medic Unit'E25	5.404e+05	0.000
## 'Medic Unit'E26	5.418e+05	0.000
## 'Medic Unit'E27	5.389e+05	0.000
## 'Medic Unit'E29	3.458e+05	0.000
## 'Medic Unit'E3	6.234e+05	0.000
## 'Medic Unit'E32	5.410e+05	0.000
## 'Medic Unit'E4	5.355e+05	0.000
## 'Medic Unit'E6	4.169e+05	0.000
## 'Medic Unit'E8	5.424e+05	0.000
## 'Medic Unit'M1	2.215e+05	0.000

## 'Medic Unit'M10	2.215e+05	0.000
## 'Medic Unit'M11	2.215e+05	0.000
## 'Medic Unit'm12	6.030e+05	0.000
## 'Medic Unit'M12	2.215e+05	0.000
## 'Medic Unit'M13	2.215e+05	0.000
## 'Medic Unit'M14	2.215e+05	0.000
## 'Medic Unit'M15	2.215e+05	0.000
## 'Medic Unit'M16	2.215e+05	0.000
## 'Medic Unit'M17	2.215e+05	0.000
## 'Medic Unit'M18	2.215e+05	0.000
## 'Medic Unit'M19	2.215e+05	0.000
## 'Medic Unit'M2	2.215e+05	0.000
## 'Medic Unit'M20	2.215e+05	0.000
## 'Medic Unit'M21	2.215e+05	0.000
## 'Medic Unit'M22	2.215e+05	0.000
## 'Medic Unit'M23	2.215e+05	0.000
## 'Medic Unit'M24	2.215e+05	0.000
## 'Medic Unit'M25	2.731e+05	0.000
## 'Medic Unit'M26	2.215e+05	0.000
## 'Medic Unit'M27	2.389e+05	0.000
## 'Medic Unit'M28	2.215e+05	0.000
## 'Medic Unit'M29	2.530e+05	0.000
## 'Medic Unit'M3	2.215e+05	0.000
## 'Medic Unit'M30	2.404e+05	0.000
## 'Medic Unit'M31	2.215e+05	0.000
## 'Medic Unit'M32	2.215e+05	0.000
## 'Medic Unit'M33	2.215e+05	0.000
## 'Medic Unit'M34	2.458e+05	0.000
## 'Medic Unit'M35	2.215e+05	0.000
## 'Medic Unit'M4	2.215e+05	0.000
## 'Medic Unit'M5	2.215e+05	0.000
## 'Medic Unit'M6	2.215e+05	0.000
## 'Medic Unit'M7	2.215e+05	0.000
## 'Medic Unit'M8	2.215e+05	0.000
## 'Medic Unit'M806	2.215e+05	0.000
## 'Medic Unit'M815	2.215e+05	0.000
## 'Medic Unit'M817	2.215e+05	0.000
## 'Medic Unit'M823	2.215e+05	0.000
## 'Medic Unit'M849	6.821e+05	0.000
## 'Medic Unit'M890	2.215e+05	0.000
## 'Medic Unit'medic 817	4.280e+05	0.000
## 'Primary Impression'Acute Respiratory Distress (Dyspnea)	2.931e+05	0.000
## 'Primary Impression'Alcohol use	2.568e+05	0.000
## 'Primary Impression'Altered Mental Status	2.568e+05	0.000
## 'Primary Impression'Back Pain	2.958e+05	0.000
## 'Primary Impression'Behavioral/psychiatric episode	2.568e+05	0.000
## 'Primary Impression'Cardiac arrest	2.785e+05	0.000
## 'Primary Impression'Cardiac arrhythmia/dysrhythmia	3.649e+05	0.000
## 'Primary Impression'Chest pain on breathing	2.825e+05	0.000
## 'Primary Impression'Cocaine related disorders	5.508e+05	0.000
## 'Primary Impression'Common Cold	3.607e+05	0.000
## 'Primary Impression'Confusion/Delirium	3.644e+05	0.000
## 'Primary Impression'Diabetic Hyperglycemia	3.041e+05	0.000
## 'Primary Impression'Extremity Pain	2.911e+05	0.000



## 'Primary Impression'Fatigue	4.480e+05	0.000
## 'Primary Impression'Fever	2.568e+05	0.000
## 'Primary Impression'Generalized Weakness	2.813e+05	0.000
## 'Primary Impression'Hypoglycemia (Not Diabetic)	3.370e+05	0.000
## 'Primary Impression'Hypothermia	3.612e+05	0.000
## 'Primary Impression'Injury	2.992e+05	0.000
## 'Primary Impression'Injury of Head	2.785e+05	0.000
## 'Primary Impression'Malaise	2.568e+05	0.000
## 'Primary Impression'No Complaints or Injury/Illness Noted	2.568e+05	0.000
## 'Primary Impression'Opioid related disorders	2.568e+05	0.000
## 'Primary Impression'Overdose - Alcohol	2.770e+05	0.000
## 'Primary Impression'Overdose - Amphetamine	2.747e+05	0.000
## 'Primary Impression'Overdose - Benzodiazepine	2.886e+05	0.000
## 'Primary Impression'Overdose - Cannabis	2.774e+05	0.000
## 'Primary Impression'Overdose - Cocaine	2.679e+05	0.000
## 'Primary Impression'Overdose - Hallucinogens	2.714e+05	0.000
## 'Primary Impression'Overdose - Heroin	2.568e+05	0.000
## 'Primary Impression'Overdose - Methadone	2.568e+05	0.000
## 'Primary Impression'Overdose - Opium	2.568e+05	0.000
## 'Primary Impression'Overdose - Other opioids	2.568e+05	0.000
## 'Primary Impression'Overdose - Synthetic marijuana	3.616e+05	0.000
## 'Primary Impression'Overdose - Synthetic narcotics	2.568e+05	0.000
## 'Primary Impression'Overdose - Unspecified	2.568e+05	0.000
## 'Primary Impression'Poisoning / Drug Ingestion	2.568e+05	0.000
## 'Primary Impression'Seizures	2.644e+05	0.000
## 'Primary Impression'Septic Shock	6.167e+05	0.000
## 'Primary Impression'Stroke	3.079e+05	0.000
## 'Primary Impression'Substance abuse	2.568e+05	0.000
## 'Primary Impression'Suicidal Ideation	3.633e+05	0.000
## 'Primary Impression'Suicide attempt	2.785e+05	0.000
## 'Primary Impression'Syncope / Fainting	5.575e+05	0.000
## 'EMD Complaint'ALLERGIC REACTION	3.399e+05	0.000
## 'EMD Complaint'Altered Mental Status	3.157e+05	0.000
## 'EMD Complaint'auto accident	3.048e+05	0.000
## 'EMD Complaint'AUTO ACCIDENT	3.380e+05	0.000
## 'EMD Complaint'CARDIAC ARREST	2.601e+05	0.000
## 'EMD Complaint'CHEST PAINS	2.601e+05	0.000
## 'EMD Complaint'CONCIOUS OVERDOSE	3.666e+05	0.000
## 'EMD Complaint'CONSCIOUS OVERDOSE	2.601e+05	0.000
## 'EMD Complaint'CONTAGIOUS EMERGENCY	2.601e+05	0.000
## 'EMD Complaint'DIABETIC EMERGENCY	2.751e+05	0.000
## 'EMD Complaint'difficulty breathing	NA	NA
## 'EMD Complaint'DIFFICULTY BREATHING	2.601e+05	0.000
## 'EMD Complaint'F21044716	5.578e+05	0.000
## 'EMD Complaint'HEAD INJURY	5.579e+05	0.000
## 'EMD Complaint'ill	3.852e+05	0.000
## 'EMD Complaint'ILL PERSON	2.601e+05	0.000
## 'EMD Complaint'INJURED FROM A FALL	2.601e+05	0.000
## 'EMD Complaint'INJURED FROM ASSAULT	3.267e+05	0.000
## 'EMD Complaint'INJURED PERSON	2.601e+05	0.000
## 'EMD Complaint'Injury of Shoulder or Upper Arm/SEIZURE	3.708e+05	0.000
## 'EMD Complaint'MEDIC RUN	2.601e+05	0.000
## 'EMD Complaint'MOTORCYCLE ACCIDENT	3.959e+05	0.000
## 'EMD Complaint'Multiple open sores	NA	NA

## 'EMD Complaint'OBSTETRICS	4.463e+05	0.000
## 'EMD Complaint'OD	3.655e+05	0.000
## 'EMD Complaint'Overdose	3.404e+05	0.000
## 'EMD Complaint'PERSON BURNED	5.614e+05	0.000
## 'EMD Complaint'PERSON DOWN	2.601e+05	0.000
## 'EMD Complaint'POISONING	3.696e+05	0.000
## 'EMD Complaint'POSSIBLE DOA	4.027e+05	0.000
## 'EMD Complaint'POSSIBLE STROKE	3.698e+05	0.000
## 'EMD Complaint'POSSIBLE STROKE PARTIAL EVIDENCE	3.064e+14	-0.076
## 'EMD Complaint'PSYCHIATRIC PROBLEMS	2.947e+05	0.000
## 'EMD Complaint'SEIZURE	2.601e+05	0.000
## 'EMD Complaint'SHOOTING	3.526e+05	0.000
## 'EMD Complaint'Suicide Attempt	4.475e+05	0.000
## 'EMD Complaint'SUICIDE ATTEMPT	2.601e+05	0.000
## 'EMD Complaint'TIA/CVA	4.012e+05	0.000
## 'EMD Complaint'Traffic Accident	6.263e+05	0.000
## 'EMD Complaint'unconscious overdose	3.632e+05	0.000
## 'EMD Complaint'UNCONSCIOUS OVERDOSE	2.601e+05	0.000
## 'EMD Complaint'Unconscious Person	3.664e+05	0.000
## 'EMD Complaint'UNCONSCIOUS PERSON	2.601e+05	0.000
## 'EMD Complaint'UNOCONSCIOUS PERSON	4.486e+05	0.000
## 'EMD Complaint'VEHICLE ACCIDENT	2.601e+05	0.000
## 'EMD Complaint'VHS	3.654e+05	0.000
## 'Alcohol / Drugs?'No Data	1.700e+00	1.088
## 'Alcohol / Drugs?'None Reported	1.980e+00	1.256
## 'Alcohol / Drugs?'Patient Admits to Alcohol Use	2.593e+05	0.000
## 'Alcohol / Drugs?'Patient Admits to Drug Use	1.990e+00	2.224
## 'Alcohol / Drugs?'Smell of Alcohol on Breath	2.165e+05	0.000
## 'Alcohol / Drugs?'Unknown	2.567e+05	0.000
## 'Naloxone Given?'Unknown	7.238e-01	-0.868
## 'Naloxone Given?'Yes	1.971e-01	0.196
## 'Loss of Consciousness?'Unknown	7.318e-01	0.302
## 'Loss of Consciousness?'Yes	9.215e-01	-0.446
## Age	7.677e-03	-0.178
##	Pr(> z )	
## (Intercept)	0.9393	
## 'Patient Funding Source'BJA; SAMHSA	0.9393	
## 'Patient Funding Source'BJA; SAMHSA; CDC	0.9393	
## 'Original Referral Source'Call / Text	0.9999	
## 'Original Referral Source'CD of Fire	0.9999	
## 'Original Referral Source'Encounter	0.9999	
## 'Original Referral Source'ESO (CFD Overdose Incident Report)	0.9999	
## 'Original Referral Source'Event Outreach	0.9999	
## 'Original Referral Source'Other	0.9999	
## 'Original Referral Source'Township	0.9999	
## GenderMale	0.9234	
## GenderNot Provided	0.9999	
## GenderUnknown	0.9980	
## 'Race/Ethnicity'Black or African American	0.9999	
## 'Race/Ethnicity'Hispanic or Latino	0.9999	
## 'Race/Ethnicity'Native Hawaiian or Other Pacific Islander	0.9999	
## 'Race/Ethnicity'Other	0.9999	
## 'Race/Ethnicity'Unknown	0.9999	
## 'Race/Ethnicity'White	0.9999	

## Demographics_EthnicityNot Hispanic or Latino	NA
## Demographics_EthnicityUnknown	NA
## HomelessYes	0.0643 .
## 'Precinct # of the Primary Address'Zone 2	0.5597
## 'Precinct # of the Primary Address'Zone 3	0.6352
## 'Precinct # of the Primary Address'Zone 4	0.7442
## 'Precinct # of the Primary Address'Zone 5	0.0985 .
## 'Do Not Contact?'Unknown	0.1569
## 'Do Not Contact?'Yes	0.7016
## 'Possible Warrants?'Unknown	0.4538
## 'Possible Warrants?'Yes	0.0454 *
## 'Suspected Human Trafficking?'Unknown	0.7639
## 'Suspected Human Trafficking?'Yes	0.9077
## 'Suspected Narcotics Activity?'Unknown	0.3833
## 'Suspected Narcotics Activity?'Yes	0.4124
## Shift2 Unit	0.0772 .
## Shift3 Unit	0.5096
## 'Medic Unit'E10	0.9998
## 'Medic Unit'E11	1.0000
## 'Medic Unit'E12	0.9999
## 'Medic Unit'E14	0.9999
## 'Medic Unit'E15	0.9999
## 'Medic Unit'E16	0.9999
## 'Medic Unit'E17	0.9999
## 'Medic Unit'E18	0.9999
## 'Medic Unit'E21	0.9999
## 'Medic Unit'E22	0.9999
## 'Medic Unit'E23	0.9999
## 'Medic Unit'E25	0.9999
## 'Medic Unit'E26	0.9999
## 'Medic Unit'E27	0.9999
## 'Medic Unit'E29	0.9999
## 'Medic Unit'E3	0.9999
## 'Medic Unit'E32	0.9999
## 'Medic Unit'E4	0.9999
## 'Medic Unit'E6	0.9999
## 'Medic Unit'E8	0.9999
## 'Medic Unit'M1	0.9999
## 'Medic Unit'M10	0.9999
## 'Medic Unit'M11	0.9999
## 'Medic Unit'm12	0.9999
## 'Medic Unit'M12	0.9999
## 'Medic Unit'M13	0.9999
## 'Medic Unit'M14	0.9999
## 'Medic Unit'M15	0.9999
## 'Medic Unit'M16	0.9999
## 'Medic Unit'M17	0.9999
## 'Medic Unit'M18	0.9999
## 'Medic Unit'M19	0.9999
## 'Medic Unit'M2	0.9999
## 'Medic Unit'M20	0.9999
## 'Medic Unit'M21	0.9999
## 'Medic Unit'M22	0.9999
## 'Medic Unit'M23	0.9999

## 'Medic Unit'M24	0.9999
## 'Medic Unit'M25	0.9999
## 'Medic Unit'M26	0.9999
## 'Medic Unit'M27	1.0000
## 'Medic Unit'M28	0.9999
## 'Medic Unit'M29	1.0000
## 'Medic Unit'M3	0.9999
## 'Medic Unit'M30	1.0000
## 'Medic Unit'M31	0.9999
## 'Medic Unit'M32	0.9999
## 'Medic Unit'M33	0.9999
## 'Medic Unit'M34	1.0000
## 'Medic Unit'M35	0.9999
## 'Medic Unit'M4	0.9999
## 'Medic Unit'M5	0.9999
## 'Medic Unit'M6	0.9999
## 'Medic Unit'M7	0.9999
## 'Medic Unit'M8	0.9999
## 'Medic Unit'M806	0.9999
## 'Medic Unit'M815	0.9999
## 'Medic Unit'M817	0.9999
## 'Medic Unit'M823	0.9999
## 'Medic Unit'M849	0.9999
## 'Medic Unit'M890	0.9999
## 'Medic Unit'medic 817	0.9999
## 'Primary Impression'Acute Respiratory Distress (Dyspnea)	1.0000
## 'Primary Impression'Alcohol use	0.9999
## 'Primary Impression'Altered Mental Status	0.9999
## 'Primary Impression'Back Pain	1.0000
## 'Primary Impression'Behavioral/psychiatric episode	0.9999
## 'Primary Impression'Cardiac arrest	1.0000
## 'Primary Impression'Cardiac arrhythmia/dysrhythmia	1.0000
## 'Primary Impression'Chest pain on breathing	1.0000
## 'Primary Impression'Cocaine related disorders	0.9999
## 'Primary Impression'Common Cold	1.0000
## 'Primary Impression'Confusion/Delirium	1.0000
## 'Primary Impression'Diabetic Hyperglycemia	1.0000
## 'Primary Impression'Extremity Pain	1.0000
## 'Primary Impression'Fatigue	0.9999
## 'Primary Impression'Fever	0.9999
## 'Primary Impression'Generalized Weakness	1.0000
## 'Primary Impression'Hypoglycemia (Not Diabetic)	1.0000
## 'Primary Impression'Hypothermia	1.0000
## 'Primary Impression'Injury	1.0000
## 'Primary Impression'Injury of Head	1.0000
## 'Primary Impression'Malaise	0.9999
## 'Primary Impression'No Complaints or Injury/Illness Noted	0.9999
## 'Primary Impression'Opioid related disorders	0.9999
## 'Primary Impression'Overdose - Alcohol	1.0000
## 'Primary Impression'Overdose - Amphetamine	1.0000
## 'Primary Impression'Overdose - Benzodiazepine	1.0000
## 'Primary Impression'Overdose - Cannabis	1.0000
## 'Primary Impression'Overdose - Cocaine	1.0000
## 'Primary Impression'Overdose - Hallucinogens	1.0000

## 'Primary Impression'Overdose - Heroin	0.9999
## 'Primary Impression'Overdose - Methadone	0.9999
## 'Primary Impression'Overdose - Opium	0.9999
## 'Primary Impression'Overdose - Other opioids	0.9999
## 'Primary Impression'Overdose - Synthetic marijuana	1.0000
## 'Primary Impression'Overdose - Synthetic narcotics	0.9999
## 'Primary Impression'Overdose - Unspecified	0.9999
## 'Primary Impression'Poisoning / Drug Ingestion	0.9999
## 'Primary Impression'Seizures	1.0000
## 'Primary Impression'Septic Shock	1.0000
## 'Primary Impression'Stroke	1.0000
## 'Primary Impression'Substance abuse	0.9999
## 'Primary Impression'Suicidal Ideation	1.0000
## 'Primary Impression'Suicide attempt	1.0000
## 'Primary Impression'Syncope / Fainting	0.9999
## 'EMD Complaint'ALLERGIC REACTION	1.0000
## 'EMD Complaint'Altered Mental Status	1.0000
## 'EMD Complaint'auto accident	1.0000
## 'EMD Complaint'AUTO ACCIDENT	1.0000
## 'EMD Complaint'CARDIAC ARREST	0.9999
## 'EMD Complaint'CHEST PAINS	0.9999
## 'EMD Complaint'CONCIOUS OVERDOSE	1.0000
## 'EMD Complaint'CONSCIOUS OVERDOSE	0.9999
## 'EMD Complaint'CONTAGIOUS EMERGENCY	0.9999
## 'EMD Complaint'DIABETIC EMERGENCY	1.0000
## 'EMD Complaint'difficulty breathing	NA
## 'EMD Complaint'DIFFICULTY BREATHING	0.9999
## 'EMD Complaint'F21044716	0.9999
## 'EMD Complaint'HEAD INJURY	0.9999
## 'EMD Complaint'ill	0.9999
## 'EMD Complaint'ILL PERSON	0.9999
## 'EMD Complaint'INJURED FROM A FALL	0.9999
## 'EMD Complaint'INJURED FROM ASSAULT	0.9999
## 'EMD Complaint'INJURED PERSON	0.9999
## 'EMD Complaint'Injury of Shoulder or Upper Arm/SEIZURE	0.9999
## 'EMD Complaint'MEDIC RUN	0.9999
## 'EMD Complaint'MOTORCYCLE ACCIDENT	1.0000
## 'EMD Complaint'Multiple open sores	NA
## 'EMD Complaint'OBSTETRICS	1.0000
## 'EMD Complaint'OD	1.0000
## 'EMD Complaint'Overdose	1.0000
## 'EMD Complaint'PERSON BURNED	0.9999
## 'EMD Complaint'PERSON DOWN	0.9999
## 'EMD Complaint'POISONING	1.0000
## 'EMD Complaint'POSSIBLE DOA	0.9999
## 'EMD Complaint'POSSIBLE STROKE	1.0000
## 'EMD Complaint'POSSIBLE STROKE PARTIAL EVIDENCE	0.9393
## 'EMD Complaint'PSYCHIATRIC PROBLEMS	1.0000
## 'EMD Complaint'SEIZURE	0.9999
## 'EMD Complaint'SHOOTING	0.9999
## 'EMD Complaint'Suicide Attempt	1.0000
## 'EMD Complaint'SUICIDE ATTEMPT	0.9999
## 'EMD Complaint'TIA/CVA	1.0000
## 'EMD Complaint'Traffic Accident	1.0000

```
## 'EMD Complaint' unconscious overdose 1.0000
## 'EMD Complaint' UNCONSCIOUS OVERDOSE 0.9999
## 'EMD Complaint' Unconscious Person 1.0000
## 'EMD Complaint' UNCONSCIOUS PERSON 0.9999
## 'EMD Complaint' UNCONSCIOUS PERSON 1.0000
## 'EMD Complaint' VEHICLE ACCIDENT 0.9999
## 'EMD Complaint' VHS 1.0000
## 'Alcohol / Drugs?' No Data 0.2765
## 'Alcohol / Drugs?' None Reported 0.2091
## 'Alcohol / Drugs?' Patient Admits to Alcohol Use 0.9999
## 'Alcohol / Drugs?' Patient Admits to Drug Use 0.0261 *
## 'Alcohol / Drugs?' Smell of Alcohol on Breath 0.9999
## 'Alcohol / Drugs?' Unknown 0.9999
## 'Naloxone Given?' Unknown 0.3852
## 'Naloxone Given?' Yes 0.8445
## 'Loss of Consciousness?' Unknown 0.7629
## 'Loss of Consciousness?' Yes 0.6558
## Age 0.8590
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
## (Dispersion parameter for binomial family taken to be 1)
```

```
## Null deviance: 1176.35 on 1089 degrees of freedom
```

```
## Residual deviance: 804.93 on 895 degrees of freedom
```

```
## (6474 observations deleted due to missingness)
```

```
## AIC: 1194.9
```

```
##
```

```
## Number of Fisher Scoring iterations: 25
```

Based on the results of the previous model, the non-significant variables have been removed from the model.  
Looking at the summary of the new model,

```
modelTwo = glm(RefusalOrTransport ~ `Homeless` + `Possible Warrants?` + `Shift` + `Alcohol / Drugs?`, data = train)
summary(modelTwo)
```

```
##
```

```
## Call:
```

```
## glm(formula = RefusalOrTransport ~ Homeless + 'Possible Warrants?' +
```

```
## Shift + 'Alcohol / Drugs?', family = "binomial", data = train)
```

```
##
```

```
## Deviance Residuals:
```

```
##      Min       1Q   Median       3Q      Max
```

```
## -2.6202  0.3299  0.5973  0.6147  0.7599
```

```
##
```

```
## Coefficients:
```

```
##
```

```
Estimate
```

```
## (Intercept) 1.15726
```

```
## HomelessYes 0.50299
```

```
## 'Possible Warrants?' Unknown 0.33110
```

```
## 'Possible Warrants?' Yes 0.28989
```

```
## Shift2 Unit -0.01322
```

```
## Shift3 Unit -0.06269
```

```
## 'Alcohol / Drugs?' Drug Paraphernalia at Scene 2.08840
```

```
## 'Alcohol / Drugs?' Drug Paraphernalia at Scene, Patient Admits to Drug Use 13.61593
```

## 'Alcohol / Drugs?'No Data	0.14487
## 'Alcohol / Drugs?'None Reported	1.26985
## 'Alcohol / Drugs?'Patient Admits to Alcohol Use	14.14712
## 'Alcohol / Drugs?'Patient Admits to Drug Use	1.40847
## 'Alcohol / Drugs?'Patient Admits to Drug Use, Patient Admits to Alcohol Use	-16.71011
## 'Alcohol / Drugs?'Positive Level known from Law Enforcement or Hospital Record	14.07771
## 'Alcohol / Drugs?'Smell of Alcohol on Breath	14.10043
## 'Alcohol / Drugs?'Unknown	2.27833
##	Std. Error
## (Intercept)	1.13297
## HomelessYes	0.22243
## 'Possible Warrants?'Unknown	0.11882
## 'Possible Warrants?'Yes	0.27251
## Shift2 Unit	0.14121
## Shift3 Unit	0.13906
## 'Alcohol / Drugs?'Drug Paraphernalia at Scene	1.51725
## 'Alcohol / Drugs?'Drug Paraphernalia at Scene, Patient Admits to Drug Use	1455.39800
## 'Alcohol / Drugs?'No Data	1.12804
## 'Alcohol / Drugs?'None Reported	1.17315
## 'Alcohol / Drugs?'Patient Admits to Alcohol Use	282.96823
## 'Alcohol / Drugs?'Patient Admits to Drug Use	1.14160
## 'Alcohol / Drugs?'Patient Admits to Drug Use, Patient Admits to Alcohol Use	1455.39797
## 'Alcohol / Drugs?'Positive Level known from Law Enforcement or Hospital Record	1455.39797
## 'Alcohol / Drugs?'Smell of Alcohol on Breath	840.23321
## 'Alcohol / Drugs?'Unknown	1.51513
##	z value
## (Intercept)	1.021
## HomelessYes	2.261
## 'Possible Warrants?'Unknown	2.787
## 'Possible Warrants?'Yes	1.064
## Shift2 Unit	-0.094
## Shift3 Unit	-0.451
## 'Alcohol / Drugs?'Drug Paraphernalia at Scene	1.376
## 'Alcohol / Drugs?'Drug Paraphernalia at Scene, Patient Admits to Drug Use	0.009
## 'Alcohol / Drugs?'No Data	0.128
## 'Alcohol / Drugs?'None Reported	1.082
## 'Alcohol / Drugs?'Patient Admits to Alcohol Use	0.050
## 'Alcohol / Drugs?'Patient Admits to Drug Use	1.234
## 'Alcohol / Drugs?'Patient Admits to Drug Use, Patient Admits to Alcohol Use	-0.011
## 'Alcohol / Drugs?'Positive Level known from Law Enforcement or Hospital Record	0.010
## 'Alcohol / Drugs?'Smell of Alcohol on Breath	0.017
## 'Alcohol / Drugs?'Unknown	1.504
##	Pr(> z )
## (Intercept)	0.30705
## HomelessYes	0.02373
## 'Possible Warrants?'Unknown	0.00533
## 'Possible Warrants?'Yes	0.28743
## Shift2 Unit	0.92541
## Shift3 Unit	0.65213
## 'Alcohol / Drugs?'Drug Paraphernalia at Scene	0.16869
## 'Alcohol / Drugs?'Drug Paraphernalia at Scene, Patient Admits to Drug Use	0.99254
## 'Alcohol / Drugs?'No Data	0.89781
## 'Alcohol / Drugs?'None Reported	0.27906
## 'Alcohol / Drugs?'Patient Admits to Alcohol Use	0.96013

```
## 'Alcohol / Drugs?'Patient Admits to Drug Use 0.21729
## 'Alcohol / Drugs?'Patient Admits to Drug Use, Patient Admits to Alcohol Use 0.99084
## 'Alcohol / Drugs?'Positive Level known from Law Enforcement or Hospital Record 0.99228
## 'Alcohol / Drugs?'Smell of Alcohol on Breath 0.98661
## 'Alcohol / Drugs?'Unknown 0.13265
```

```
##
## (Intercept)
## HomelessYes *
## 'Possible Warrants?'Unknown **
## 'Possible Warrants?'Yes
## Shift2 Unit
## Shift3 Unit
```

```
## 'Alcohol / Drugs?'Drug Paraphernalia at Scene
## 'Alcohol / Drugs?'Drug Paraphernalia at Scene, Patient Admits to Drug Use
## 'Alcohol / Drugs?'No Data
## 'Alcohol / Drugs?'None Reported
## 'Alcohol / Drugs?'Patient Admits to Alcohol Use
## 'Alcohol / Drugs?'Patient Admits to Drug Use
## 'Alcohol / Drugs?'Patient Admits to Drug Use, Patient Admits to Alcohol Use
## 'Alcohol / Drugs?'Positive Level known from Law Enforcement or Hospital Record
## 'Alcohol / Drugs?'Smell of Alcohol on Breath
## 'Alcohol / Drugs?'Unknown
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## (Dispersion parameter for binomial family taken to be 1)
```

```
## Null deviance: 2134.4 on 2610 degrees of freedom
## Residual deviance: 2031.4 on 2595 degrees of freedom
## (4953 observations deleted due to missingness)
## AIC: 2063.4
```

```
##
## Number of Fisher Scoring iterations: 14
```

```
modelThree = glm(RefusalOrTransport ~ `Homeless` + `Possible Warrants?` + Age, data = train, family='binomial')
summary(modelThree)
```

```
##
## Call:
## glm(formula = RefusalOrTransport ~ Homeless + 'Possible Warrants?' + Age, family = "binomial", data = train)
```

```
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2.1642   0.5091   0.6533   0.6893   0.7453
```

```
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)      1.069087   0.103835  10.296 < 2e-16 ***
## HomelessYes       0.645736   0.117381   5.501 3.77e-08 ***
## 'Possible Warrants?'Unknown 0.173432   0.062684   2.767 0.00566 **
## 'Possible Warrants?'Yes    0.289587   0.128614   2.252 0.02435 *
## Age               0.005373   0.002427   2.214 0.02686 *
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



```
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 6996.7  on 7120  degrees of freedom
## Residual deviance: 6946.1  on 7116  degrees of freedom
##      (443 observations deleted due to missingness)
## AIC: 6956.1
##
## Number of Fisher Scoring iterations: 4
```