

Graphs

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The CSV files exported from MIMIC2.6 include:

- MIMIC26_subject_id.csv (427 subjects, neonates included)
- Hadmit_frequency.csv
- First_hadm.csv
- Second_hadm.csv
- Third_hadm.csv
- 4orMore_hadm.csv (You will need to change filename to something without a number)
- neonate_icustayDetail.csv
- Demographics.csv (From first ICU/hospital admission)
- Comorbidities.csv (From first ICU/hospital admission)

The CSV files are exported without column headers from Query Builder. The SQL codes and the column headers can be found in the WORD files shared in the group DropBox folder: <https://www.dropbox.com/sh/ico2ey7bepmv19m/AAC6lw7I0rHkEZPFpjqPXX6a?dl=0>

First we will read in the data, assign column headers and join the various_hadm tables:

```
setwd("~/Documents/frequent flyer")

## ICU stay detail data (excluding neonates):
col_vec <- c("INDEX", "ICUSTAY_ID", "SUBJECT_ID", "GENDER", "DOB", "DOD", "EXPIRE_FLG", "SUBJECT_ICUSTAY_ID")
First_hadm <- read.csv("First_hadm.csv", header = FALSE)
Second_hadm <- read.csv("Second_hadm.csv", header = FALSE)
Third_hadm <- read.csv("Third_hadm.csv", header = FALSE)
fourPlus_hadm <- read.csv("fourPlus_hadm.csv", header = FALSE)
##I had to change the file name for 4orMore_hadm.csv to fourPlus_hadm.csv. For some reason read.csv() doesn't work

com.dat <- as.data.frame(rbind(First_hadm, Second_hadm, Third_hadm, fourPlus_hadm))
colnames(com.dat) <- col_vec

## Demographics data at first hospital admission:
Demo <- read.csv("Demographics.csv", header = FALSE)
colnames(Demo) <- c("INDEX", "SUBJECT_ID", "HADM_ID", "ADMIT_AGE", "GENDER", "DOD", "MARITAL_STATUS", "MARRIAGE_DATE")

## Comorbidities data at first hospital admission:
Comorb <- read.csv("Comorbidities.csv", header = FALSE)
colnames(Comorb) <- c("INDEX", "SUBJECT_ID", "HADM_ID", "CATEGORY", "CONGESTIVE_HEART_FAILURE", "CARDIAC_DISEASE")

## Hospital admission frequency by admission order:
freq <- read.csv("Hadmit_frequency.csv", header = FALSE)
colnames(freq) <- c("HOSPITAL_SEQ", "NUMBER_OF_PATIENTS")
```

```
##
## Attaching package: 'dplyr'
##
## The following object is masked from 'package:stats':
##
##   filter
##
## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union

## Warning: package 'lattice' was built under R version 3.1.3
```

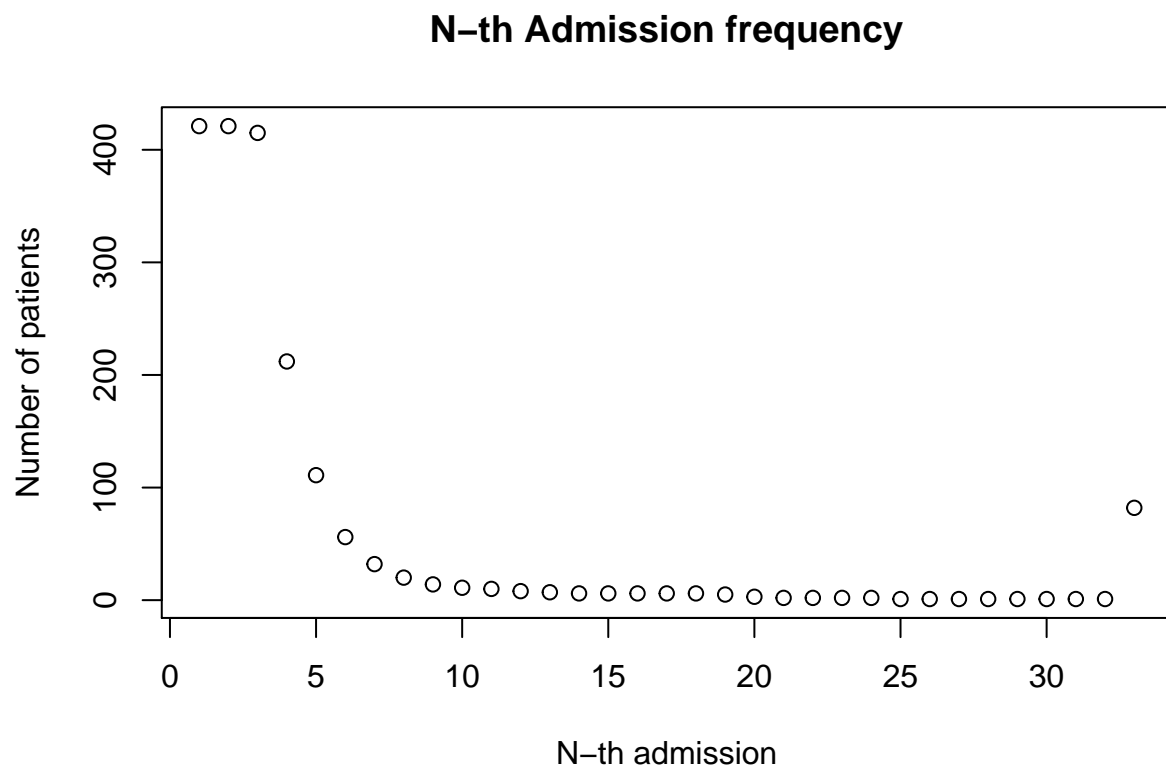
Total number of frequent flyer patients excluding neonates = 421

```
uniq_id <- unique(com.dat$SUBJECT_ID, na.rm = TRUE)
length(uniq_id)
```

```
## [1] 421
```

Hospital admission frequency by admission order:

```
plot(freq, main = "N-th Admission frequency", xlab = "N-th admission", ylab = "Number of patients")
```



First 10 rows and last 3 rows of table:

The 1st, 2nd and 3rd admission should all have 421 patients by study selection criteria but the 3rd admission only has 415 patients. There are some (null) values in hospital_seq column (and in many other columns) so I think this is the most likely reason why.

```
head(freq, 10)
```

```
##      HOSPITAL_SEQ  NUMBER_OF_PATIENTS
## 1              1              421
## 2              2              421
## 3              3              415
## 4              4              212
## 5              5              111
## 6              6              56
## 7              7              32
## 8              8              20
## 9              9              14
## 10             10              11
```

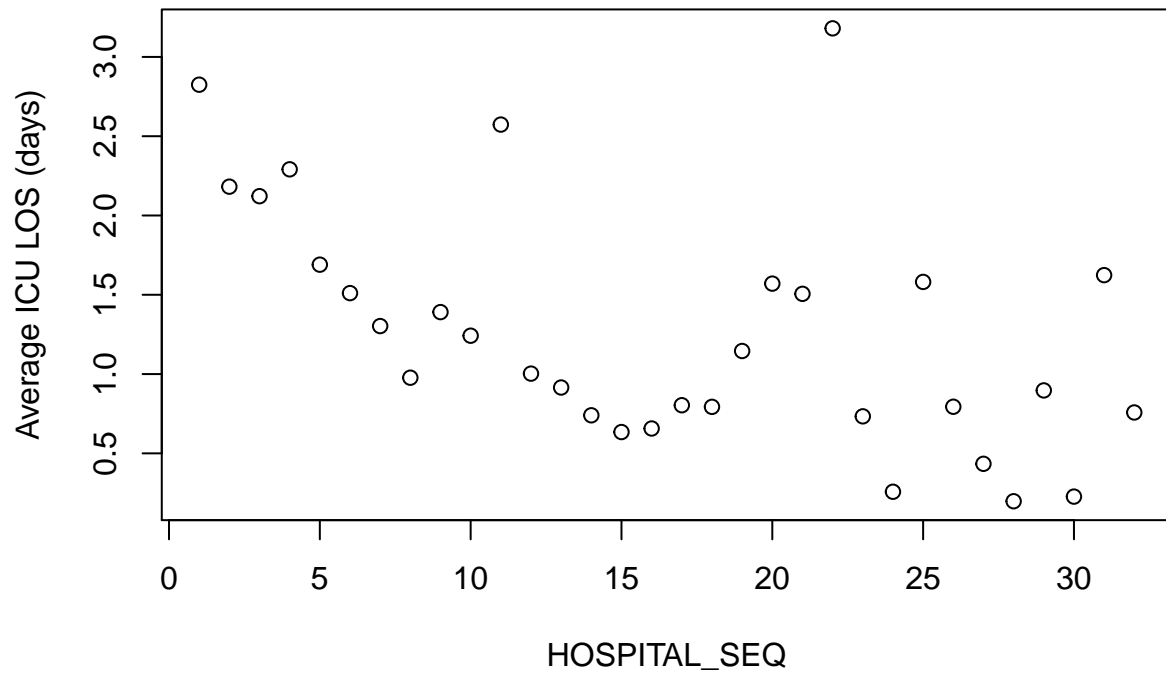
```
## Unclear why there are 82 patients with 33 hospital admissions. Pulling the data for hospital_seq =33
tail(freq, 3)
```

```
##      HOSPITAL_SEQ  NUMBER_OF_PATIENTS
## 31              31              1
## 32              32              1
## 33              33             82
```

Average ICU LOS at N-th admission:

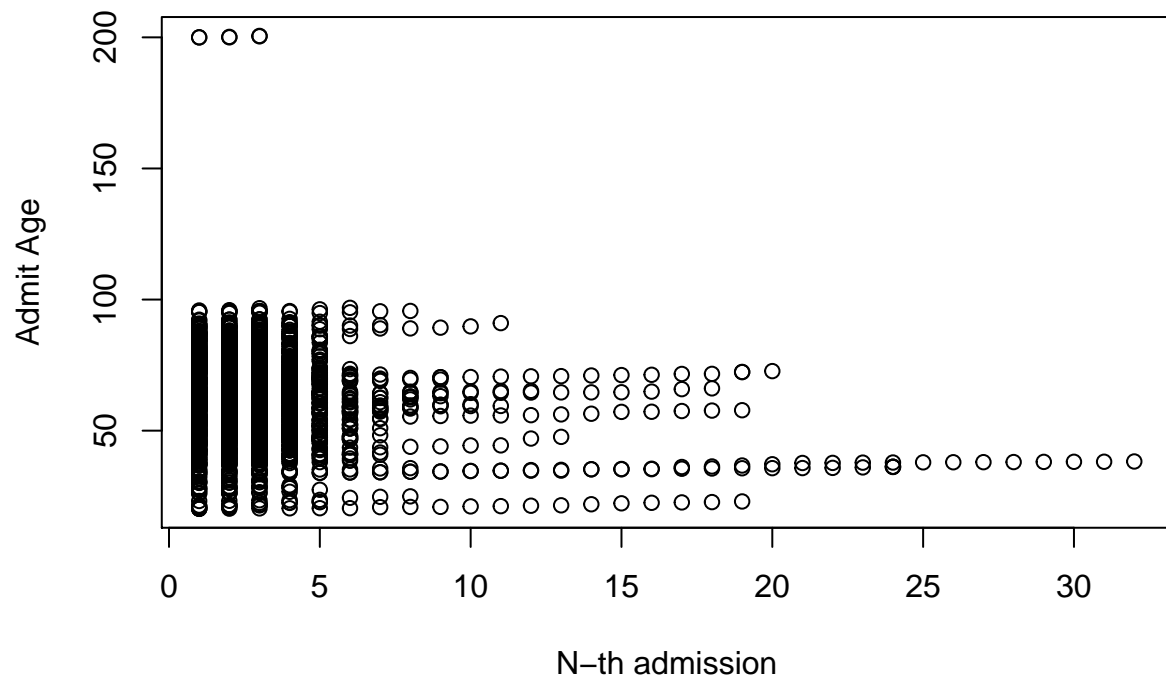
```
##      HOSPITAL_SEQ  LOS_min mins ICU_DAYS
## 1              1 10169.824 3600 2.824951
## 2              2  7854.462 3600 2.181795
## 3              3  7638.126 3600 2.121702
## 4              4  8248.087 3600 2.291135
## 5              5  6083.969 3600 1.689991
## 6              6  5437.790 3600 1.510497
```

Average LOS at N-th Admission



Frequent flyers by age:

Age at N-th Admission



There are probably better plots than this but this plot seems to show many ‘ultra-frequent-flyer’ middle age ish.

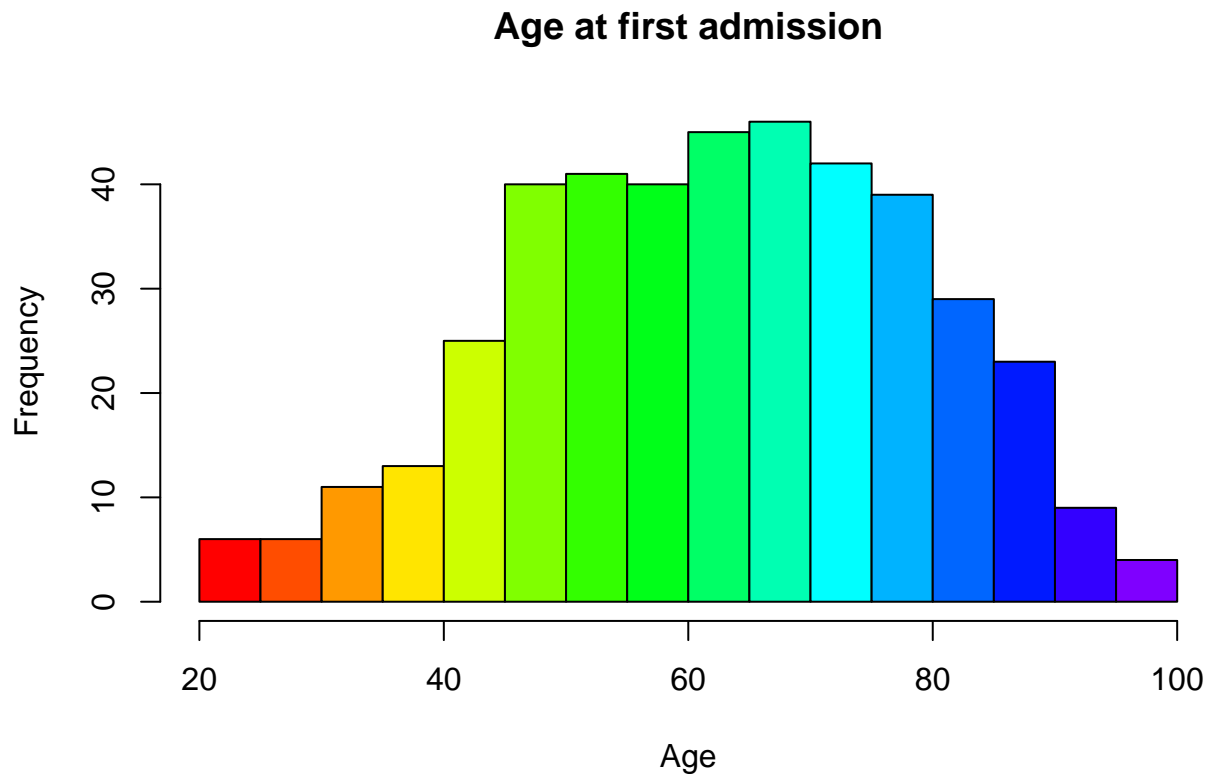
Demographics summary for first admission (Joy's codes):

dem.table

##		mean	sd	median	min	max	n
##	ADMIT_AGE	62.54100189	16.3609021	62.71179	20.18045	95.82946	419
##	Male	0.53221957	0.4995573	1.00000	0.00000	1.00000	419
##	Female	0.46778043	0.4995573	0.00000	0.00000	1.00000	419
##	Married	0.47732697	0.5000828	0.00000	0.00000	1.00000	419
##	Black	0.16706444	0.3734793	0.00000	0.00000	1.00000	419
##	White	0.70167064	0.4580718	1.00000	0.00000	1.00000	419
##	Hispanic	0.02863962	0.1669908	0.00000	0.00000	1.00000	419
##	OtherEth	0.07637232	0.2659104	0.00000	0.00000	1.00000	419
##	Medicare_Medicaid	0.69689737	0.4601486	1.00000	0.00000	1.00000	419
##	Private	0.25775656	0.4379222	0.00000	0.00000	1.00000	419
##	Other_Payor	0.04534606	0.2083107	0.00000	0.00000	1.00000	419
##	Died	0.64200477	0.4799838	1.00000	0.00000	1.00000	419

Age groups at first admission:

##	Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
##	20.18	50.36	62.71	62.54	74.92	95.83



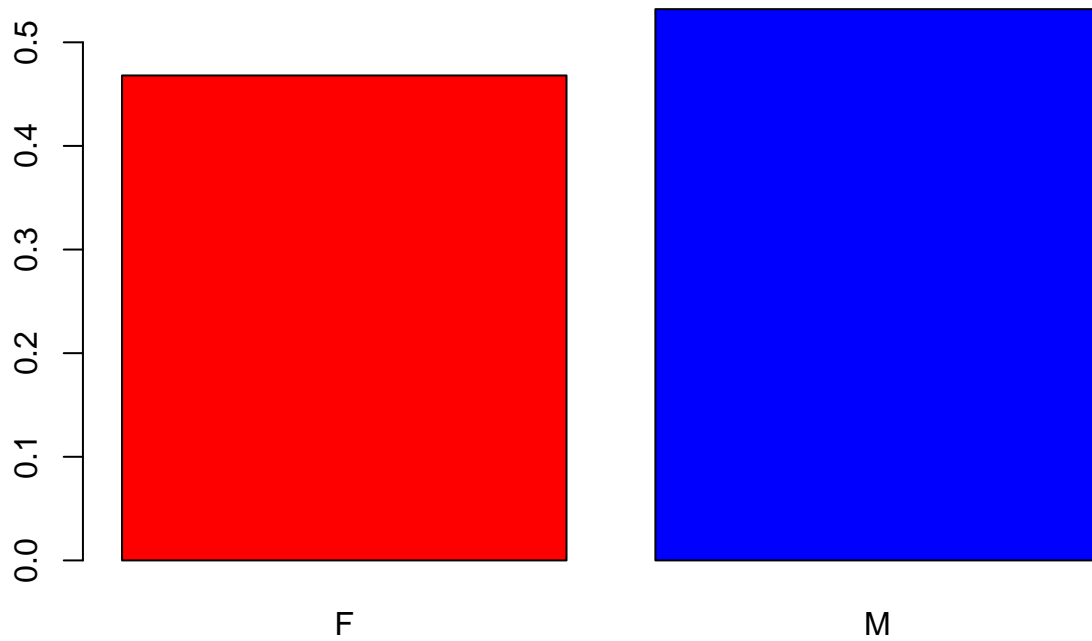
Gender proportions at first admission:

##	F	M
----	---	---

```
## 196 223
```

```
## gender
##      F      M
## 0.468 0.532
```

Gender at First Admission

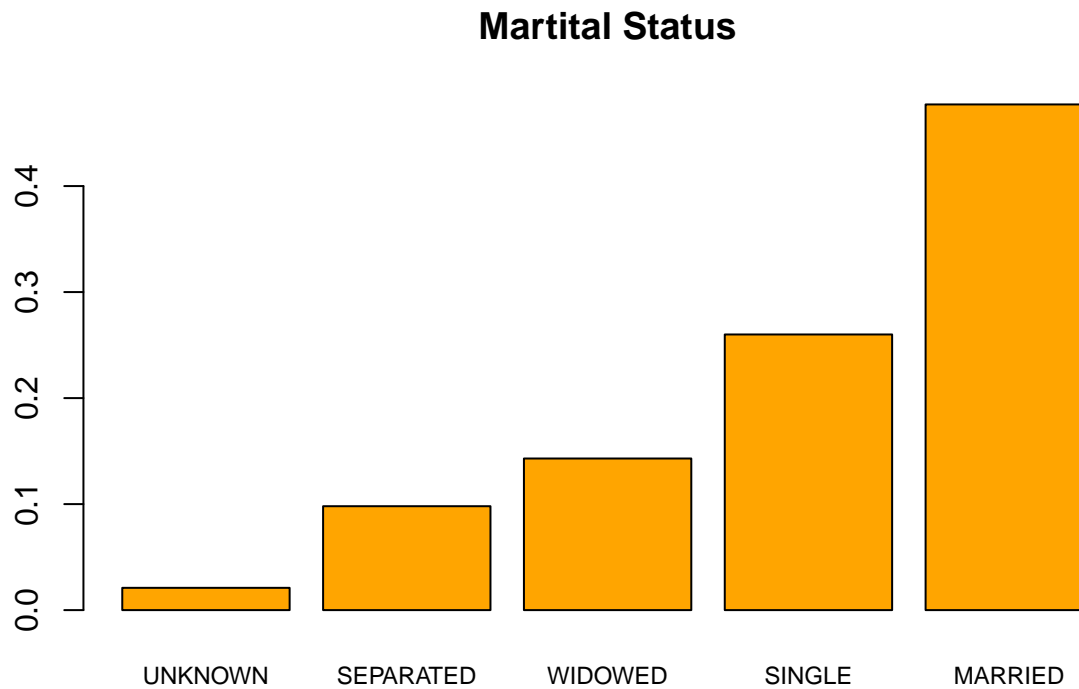


Marital Status for first admission (Joy's codes):

```
##      (null)      DIVORCED      MARRIED      SEPARATED
##          8          31          200          10
##      SINGLE UNKNOWN (DEFAULT)      WIDOWED
##          109          1          60
```

```
##      UNKNOWN SEPARATED      MARRIED      SINGLE      WIDOWED
##          9          41          200          109          60
```

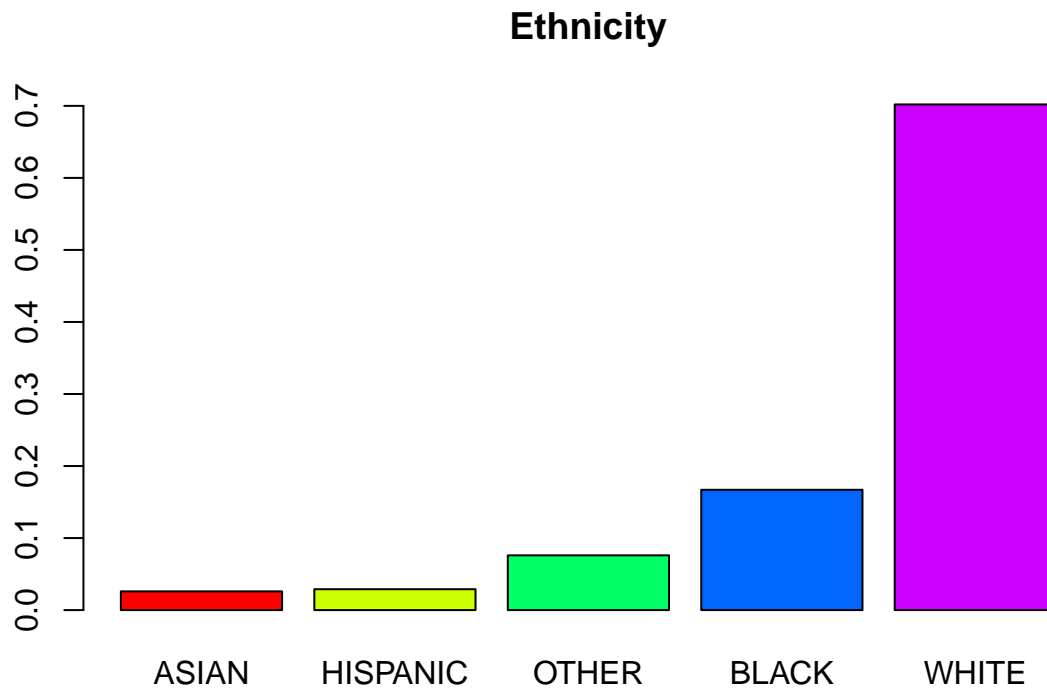
```
## MarS.clean
##      UNKNOWN SEPARATED      MARRIED      SINGLE      WIDOWED
##      0.021      0.098      0.477      0.260      0.143
```



Ethnicity breakdown for first admission (Ned's codes):

##	ASIAN	BLACK/AFRICAN AMERICAN
##	11	69
##	BLACK/CAPE VERDEAN	HISPANIC OR LATINO
##	1	11
##	HISPANIC/LATINO - GUATEMALAN	MIDDLE EASTERN
##	1	1
##	MULTI RACE ETHNICITY	OTHER
##	1	7
##	PATIENT DECLINED TO ANSWER	UNKNOWN/NOT SPECIFIED
##	2	21
##	WHITE	
##	294	

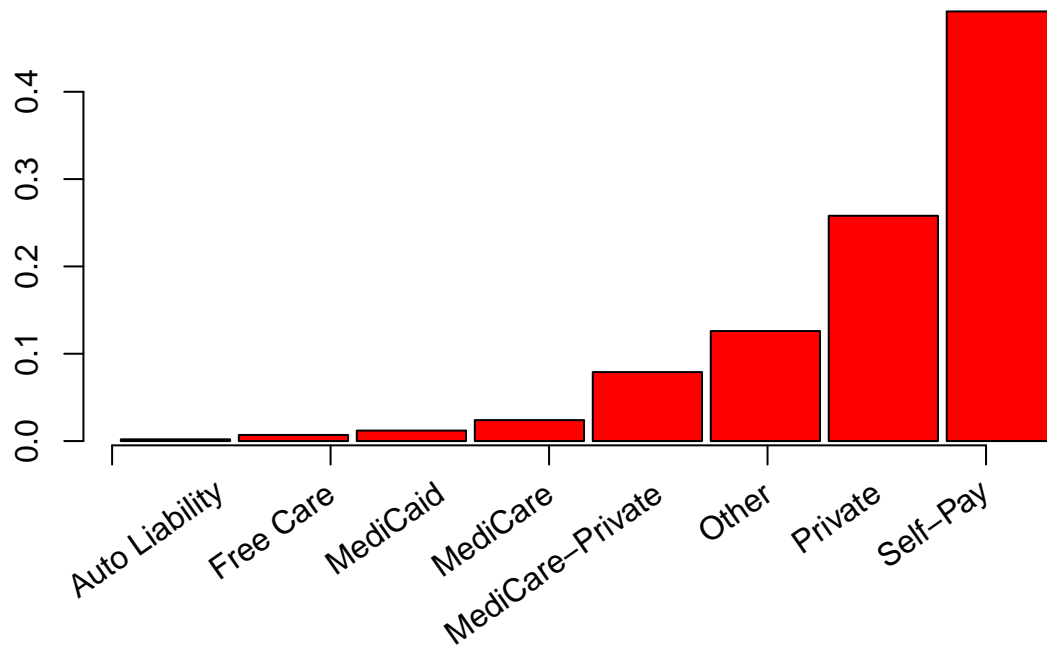
##	ASIAN	BLACK	HISPANIC	OTHER	WHITE
##	0.026	0.167	0.029	0.076	0.702



Payor groups on first admission (Joy's codes):

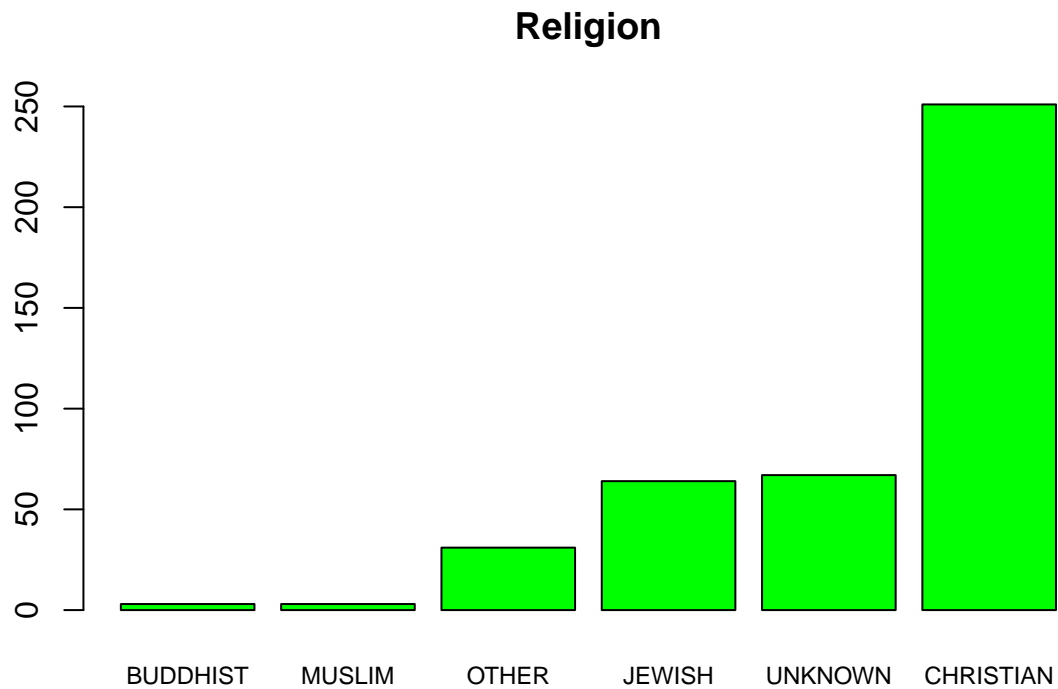
##	AUTO LIABILITY	FREE CARE	MEDICAID	MEDICARE
##	3	10	53	206
##	MEDICARE-PRIVATE	OTHER	PRIVATE	SELF-PAY
##	33	5	108	1
##	payor			
##	AUTO LIABILITY	FREE CARE	MEDICAID	MEDICARE
##	0.007	0.024	0.126	0.492
##	MEDICARE-PRIVATE	OTHER	PRIVATE	SELF-PAY
##	0.079	0.012	0.258	0.002

Overall Payor Group on 1st Hadm



Religion at first admission (Jonathan's codes):

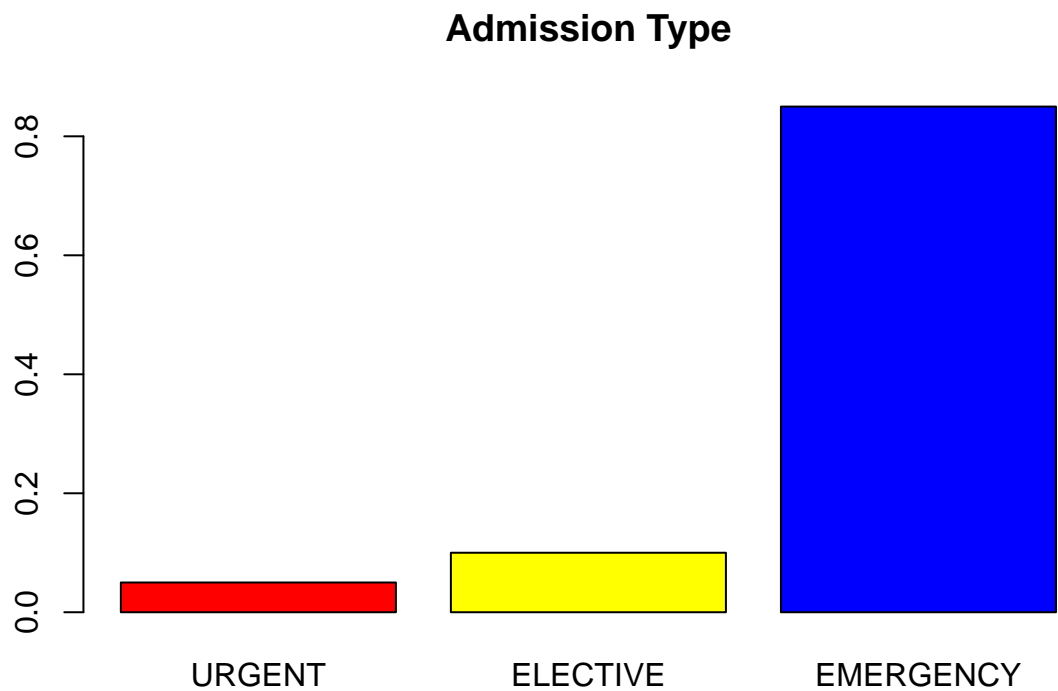
##	(null)	7TH DAY ADVENTIST	BUDDHIST			
##	3	1	3			
##	CATHOLIC	CHRISTIAN SCIENTIST	EPISCOPALIAN			
##	169	3	6			
##	GREEK ORTHODOX	JEHOVAH'S WITNESS	JEWISH			
##	5	3	64			
##	MUSLIM	NOT SPECIFIED	OTHER			
##	3	41	30			
##	PROTESTANT QUAKER	UNITARIAN-UNIVERSALIST	UNOBTAINABLE			
##	64	1	23			
##	UNKNOWN	CHRISTIAN	BUDDHIST	JEWISH	MUSLIM	OTHER
##	67	251	3	64	3	31



Admission Type at first admission (Jonathan's codes):

```
## ELECTIVE EMERGENCY URGENT
##      42      356      21
```

```
## adtyp
## ELECTIVE EMERGENCY URGENT
##      0.10      0.85      0.05
```

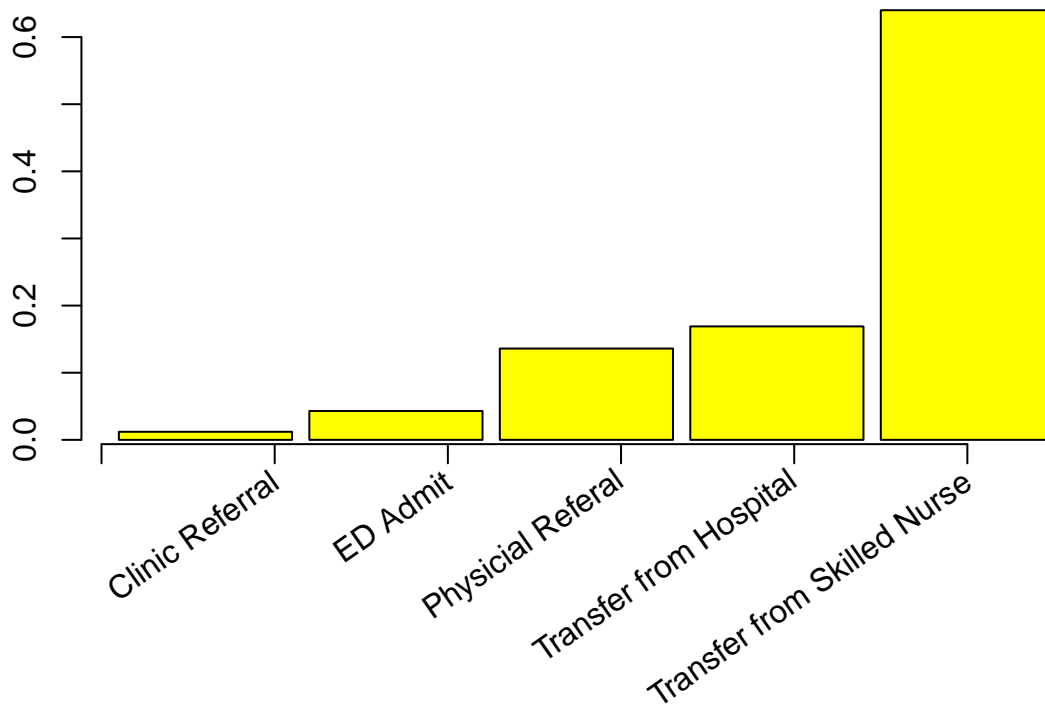


Admission Source at first admission:

```
## CLINIC REFERRAL/PREMATURE      EMERGENCY ROOM ADMIT
##                               18                      268
## PHYS REFERRAL/NORMAL DELI TRANSFER FROM HOSP/EXTRAM
##                               71                      57
## TRANSFER FROM SKILLED NUR
##                               5
```

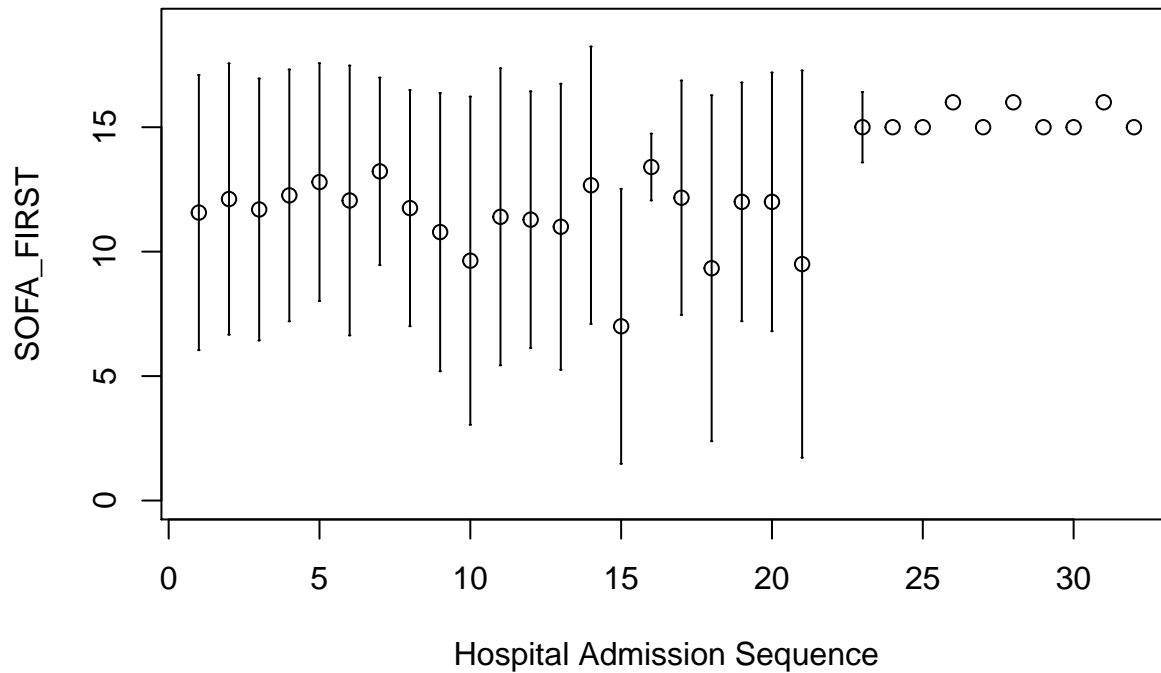
```
## adsource
## CLINIC REFERRAL/PREMATURE      EMERGENCY ROOM ADMIT
##                               0.043                    0.640
## PHYS REFERRAL/NORMAL DELI TRANSFER FROM HOSP/EXTRAM
##                               0.169                    0.136
## TRANSFER FROM SKILLED NUR
##                               0.012
```

Admission Source



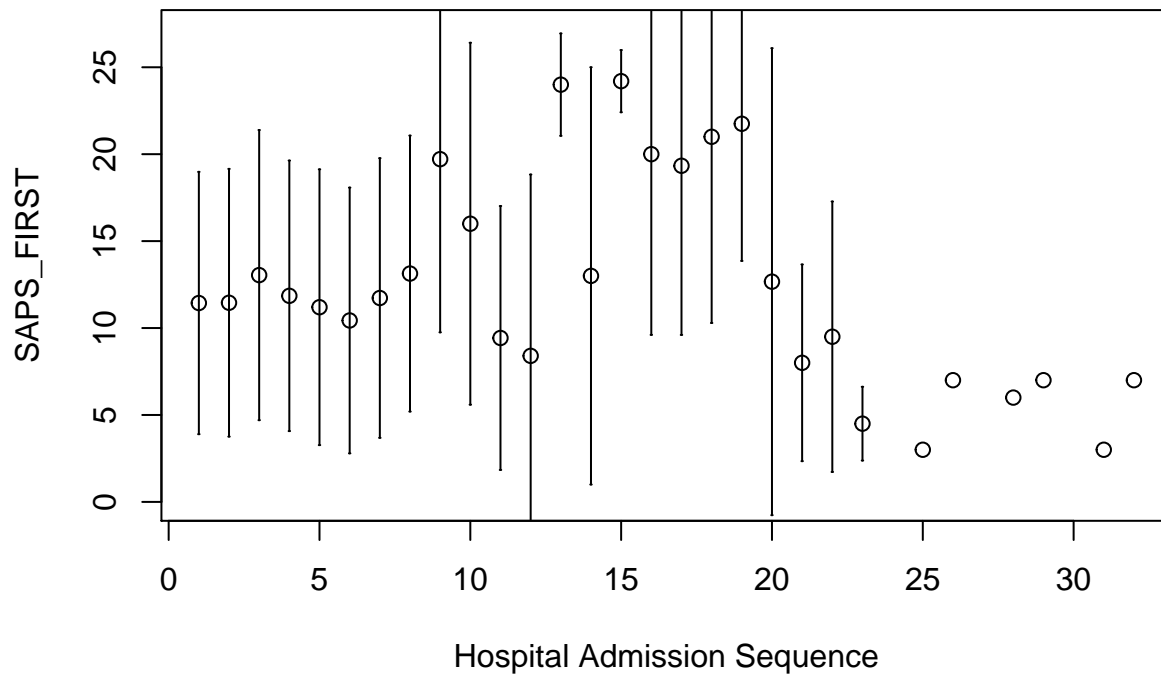
SOFA_FIRST scores by hospital admission sequence (group codes):

FIRST SOFA score by Hospital Admission



SAPS_FIRST scores by hospital admission sequence (group codes):

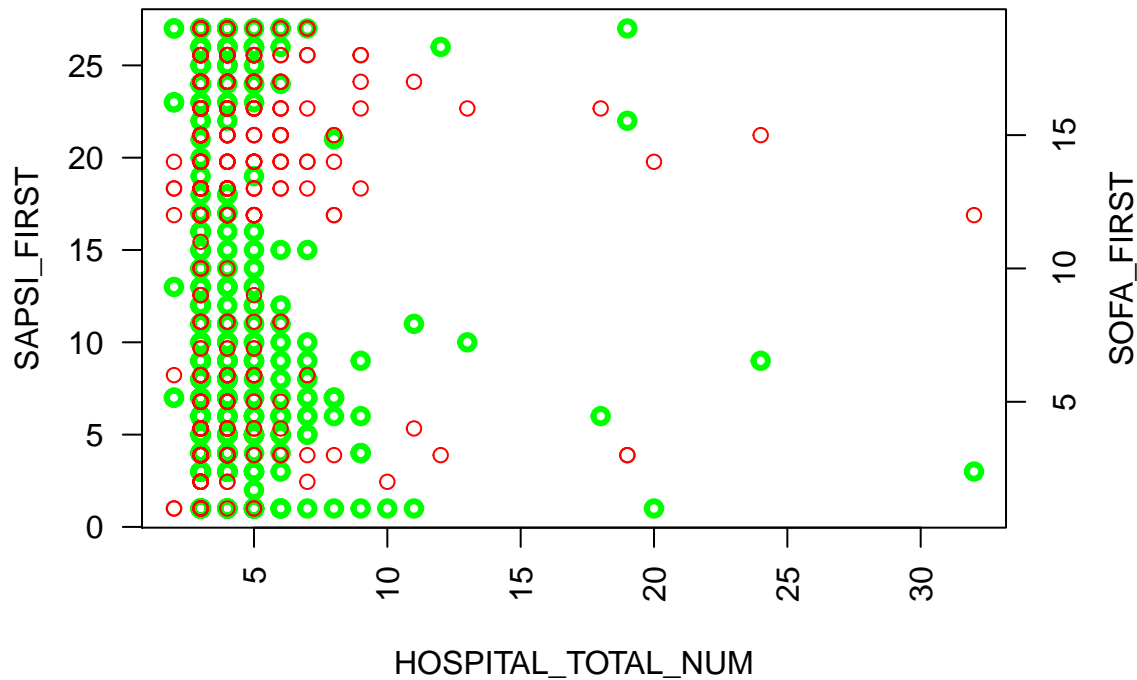
FIRST SAPS-I score by Hospital Admission



Severity score, SAPS-I and SOFA, on first admission versus total number of hospital admission, “HOSPITAL_TOTAL_NUM”:

```
## 'data.frame': 466 obs. of 3 variables:
## $ HOSPITAL_TOTAL_NUM: num 3 5 5 5 3 3 4 3 3 5 ...
## $ SAPSI_FIRST : Factor w/ 27 levels "(null)","1.0",...: 1 6 1 1 12 11 7 23 15 12 ...
## $ SOFA_FIRST : Factor w/ 19 levels "(null)","0.0",...: 1 16 16 14 5 18 8 3 18 6 ...
```

First_hadm severity scores vs Total number of Hadm



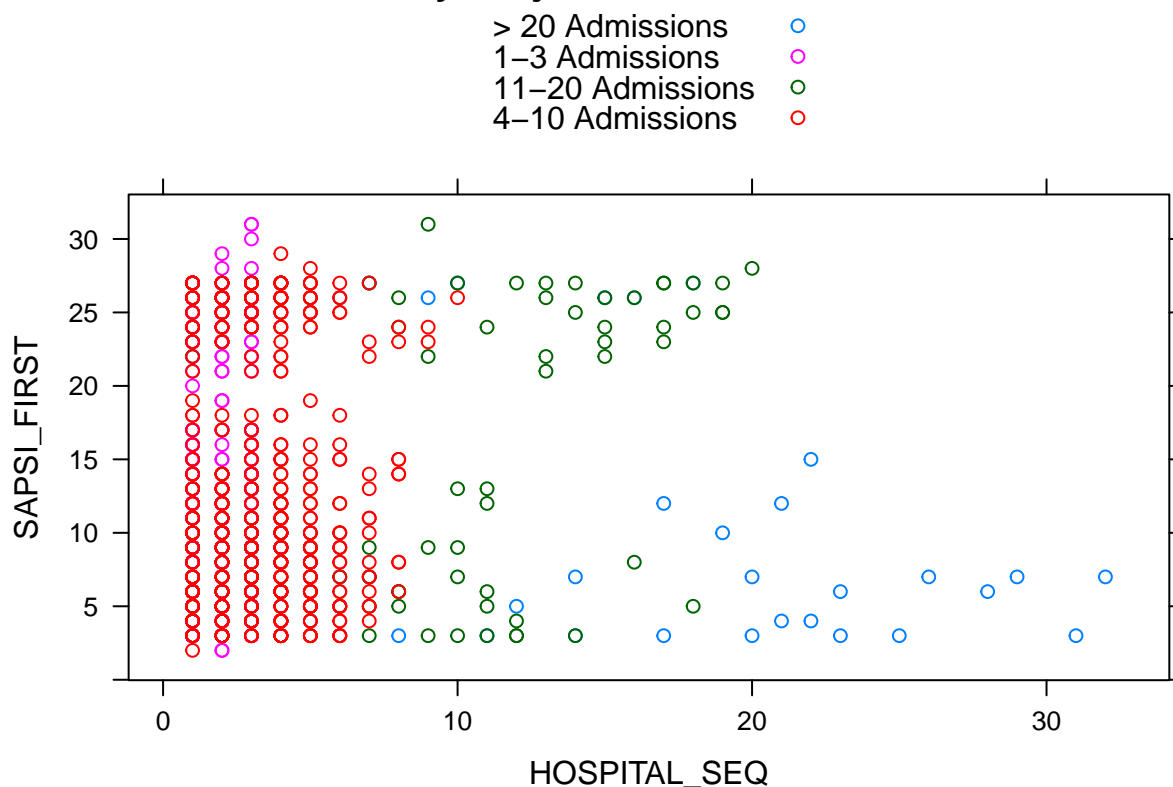
Tracking individual patient’s SAPS-I scores by hospital admission sequence (group codes):

```
## [1] 1425
```

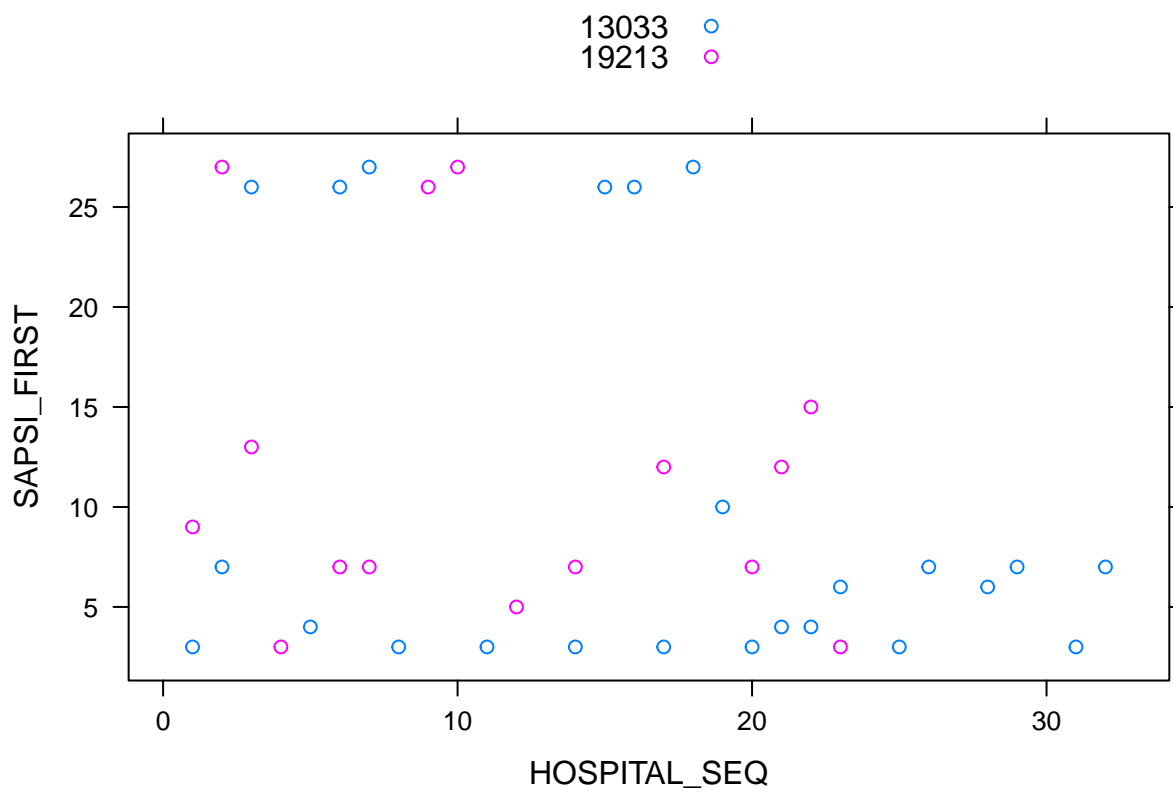
```
## [1] 1425
```

```
## [1] 1425
```

SAPS-I score by subject maximum total admissions



SAPS-I score for >20 Admissions



Survival post first ICU admission (group codes):

```
## [1] 1946
```

```
##   ICUSTAY_ID SUBJECT_ID GENDER   DOB   DOD EXPIRE_FLG
## 1         77         68      F 261934 277257         Y
## 2         78         68      F 261934 277257         Y
## 3         79         68      F 261934 277257         Y
##   HOSPITAL_EXPIRE_FLG HOSPITAL_SEQ ICUSTAY_ADMIT_AGE HOSPITAL_ADMIT_DT
## 1                   N             1          41.45551          277071
## 2                   N             2          41.80141          277199
## 3                   N             2          41.84161          277199
```

```
## [1] 421
```

```
## Source: local data frame [6 x 11]
```

```
## Groups: SUBJECT_ID
```

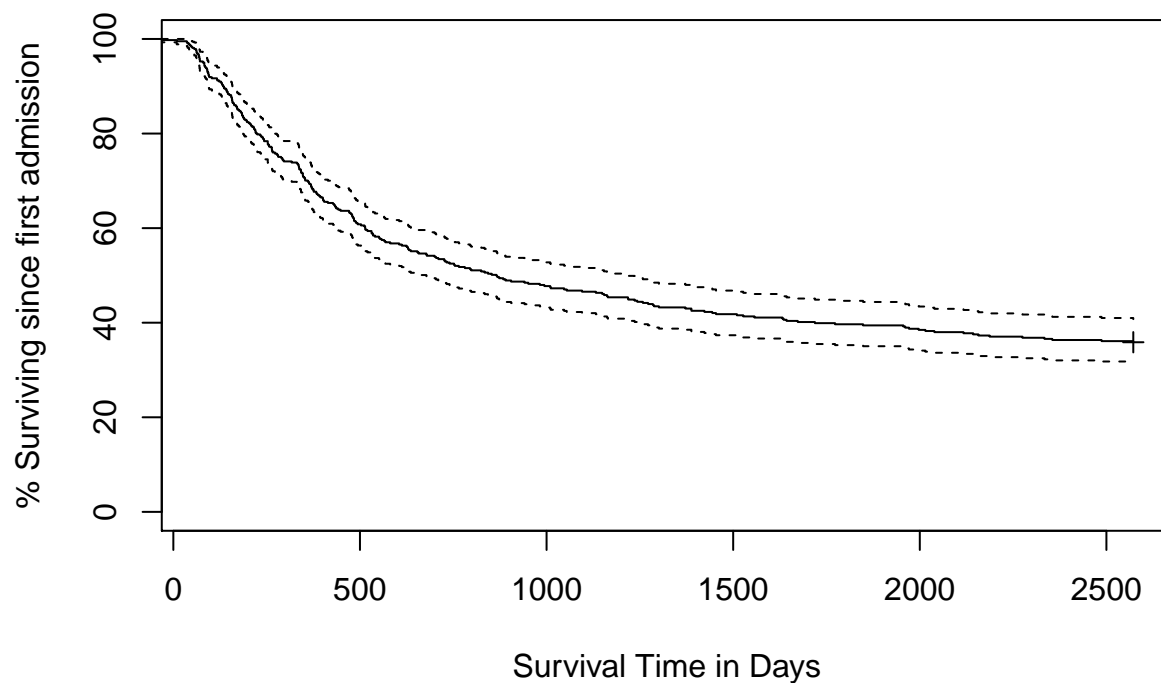
```
##
```

```
##   ICUSTAY_ID SUBJECT_ID GENDER   DOB   DOD EXPIRE_FLG
## 1         77         68      F 261934 277257         2
## 2        126        109      F 496918      NA         1
## 3        231        188      M 480729      NA         1
## 4        410        339      F 393980      NA         1
## 5        427        353      M 389594 412953         2
## 6        493        402      F 518184      NA         1
```

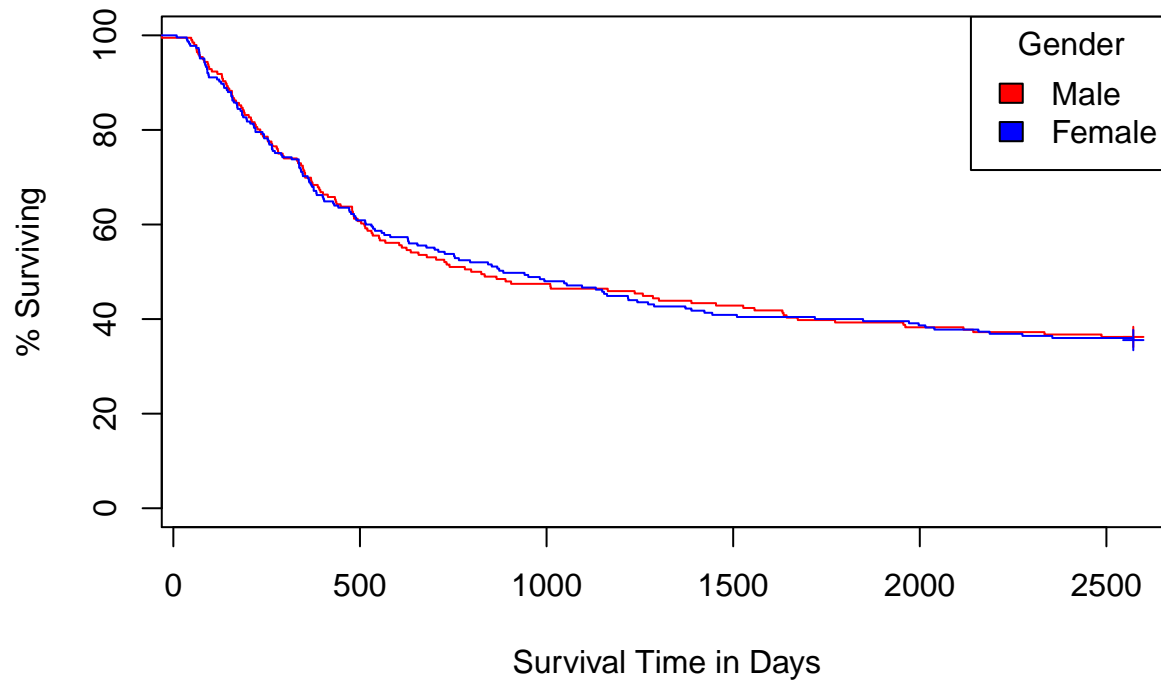
```
## Variables not shown: HOSPITAL_EXPIRE_FLG (fctr), HOSPITAL_SEQ (dbl),
```

```
##   ICUSTAY_ADMIT_AGE (dbl), HOSPITAL_ADMIT_DT (dbl), days (dbl)
```

Survival Distribution From First Admission



Survival Distributions by Gender



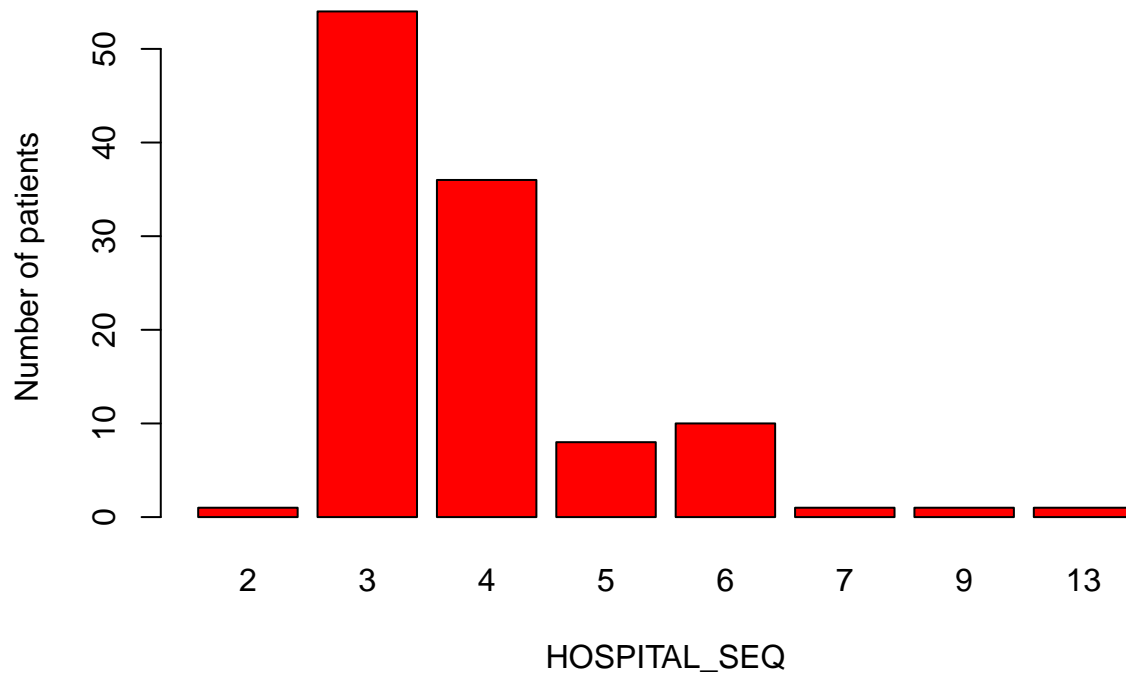
Inpatient death - Nth admission that patient died:

```
## 'data.frame': 1946 obs. of 3 variables:
## $ SUBJECT_ID : int 68 109 109 109 188 339 353 402 580 634 ...
## $ HOSPITAL_EXPIRE_FLG: Factor w/ 2 levels "N","Y": 1 1 1 1 1 1 1 1 1 1 ...
## $ HOSPITAL_SEQ : num 1 1 1 1 1 1 1 1 1 1 ...
```

```
## SUBJECT_ID HOSPITAL_EXPIRE_FLG HOSPITAL_SEQ
## Min. : 634 Y:112 Min. : 2.000
## 1st Qu.: 6523 1st Qu.: 3.000
## Median :12252 Median : 4.000
## Mean :13159 Mean : 3.902
## 3rd Qu.:18234 3rd Qu.: 4.000
## Max. :26688 Max. :13.000
```

```
## SUBJECT_ID HOSPITAL_EXPIRE_FLG HOSPITAL_SEQ
## 1 9865 Y 2
```

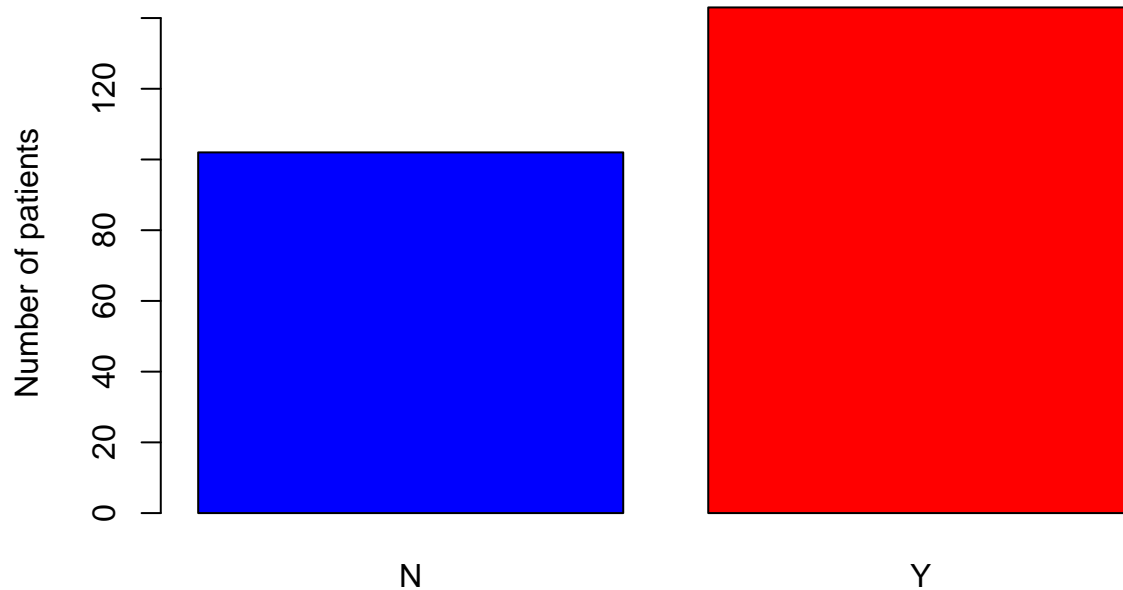

Inpatient death: Number of patients who died at Nth Hadm



Outpatient survival and death - Time to death since last admission for patients who did not die in hospital:

```
##      SUBJECT_ID          DOD      EXPIRE_FLG      HADM_ID
##  Min.   : 68      (null)      :102      N:102      Min.   : 98
##  1st Qu.: 6828    2508-01-15 00:00:00.0: 1      Y:143      1st Qu.: 8808
##  Median :12984    2517-01-23 00:00:00.0: 1                      Median :16860
##  Mean   :13361    2525-06-20 00:00:00.0: 1                      Mean   :15713
##  3rd Qu.:20204    2525-10-02 00:00:00.0: 1                      3rd Qu.:23228
##  Max.   :26523    2525-11-07 00:00:00.0: 1                      Max.   :34632
##                      (Other)      :138
##  HOSPITAL_SEQ      HOSPITAL_LAST_FLG      HOSPITAL_DISCH_DT
##  Min.   : 2.000      N: 0      2525-06-08 00:00:00.0: 1
##  1st Qu.: 3.000      Y:245      3417-11-12 00:00:00.0: 1
##  Median : 3.000      2516-12-17 00:00:00.0: 1
##  Mean   : 4.061      2525-06-05 00:00:00.0: 1
##  3rd Qu.: 4.000      2525-06-24 00:00:00.0: 1
##  Max.   :24.000      2528-03-11 00:00:00.0: 1
##                      (Other)      :239
##  HOSPITAL_EXPIRE_FLG  ICUSTAY_SEQ      ICUSTAY_LAST_FLG  ICUSTAY_ADMIT_AGE
##  N:245                Min.   :1.000      N: 0                Min.   : 21.51
##  Y: 0                1st Qu.:1.000      Y:245              1st Qu.: 50.95
##                      Median :1.000                Median : 63.57
##                      Mean   :1.114                Mean   : 63.73
##                      3rd Qu.:1.000                3rd Qu.: 75.64
##                      Max.   :3.000                Max.   :200.40
##
```

Outpatient Deaths



N = Alive, Y = Dead

```
## 'data.frame':    245 obs. of  11 variables:
## $ SUBJECT_ID      : int  18825 20140 68 188 339 402 781 805 849 1029 ...
## $ DOD              : num  529057 202984 277257 NA NA ...
## $ EXPIRE_FLG       : Factor w/ 2 levels "N","Y": 2 2 2 1 1 1 2 1 2 1 ...
## $ HADM_ID          : int  26250 13455 26139 22644 27173 11173 20390 9952 21270 11730 ...
## $ HOSPITAL_SEQ      : num  2 2 3 3 3 3 3 3 3 3 ...
## $ HOSPITAL_LAST_FLG : Factor w/ 2 levels "N","Y": 2 2 2 2 2 2 2 2 2 2 ...
## $ HOSPITAL_DISCH_DT : num  528821 202868 277234 499908 418727 ...
## $ HOSPITAL_EXPIRE_FLG: Factor w/ 2 levels "N","Y": 1 1 1 1 1 1 1 1 1 1 ...
## $ ICUSTAY_SEQ       : num  1 1 1 1 1 1 1 1 1 1 ...
## $ ICUSTAY_LAST_FLG  : Factor w/ 2 levels "N","Y": 2 2 2 2 2 2 2 2 2 2 ...
## $ ICUSTAY_ADMIT_AGE : num  77.3 58.4 41.9 52.5 67.7 ...
```

```
##      SUBJECT_ID      DOD      EXPIRE_FLG      HADM_ID
## Min.   :   68   Min.   :196514   N:102      Min.   :   98
## 1st Qu.: 6828   1st Qu.:273645   Y:143      1st Qu.: 8808
## Median :12984   Median :386027                   Median :16860
## Mean   :13361   Mean   :374437                   Mean   :15713
## 3rd Qu.:20204   3rd Qu.:465426                   3rd Qu.:23228
## Max.   :26523   Max.   :560078                   Max.   :34632
##                                     NA's   :102
##      HOSPITAL_SEQ      HOSPITAL_LAST_FLG HOSPITAL_DISCH_DT HOSPITAL_EXPIRE_FLG
## Min.   : 2.000      N: 0      Min.   :196470      N:245
## 1st Qu.: 3.000      Y:245      1st Qu.:277234      Y: 0
## Median : 3.000                                Median :390571
## Mean   : 4.061                                Mean   :383383
## 3rd Qu.: 4.000                                3rd Qu.:483099
## Max.   :24.000                                Max.   :560054
##
```

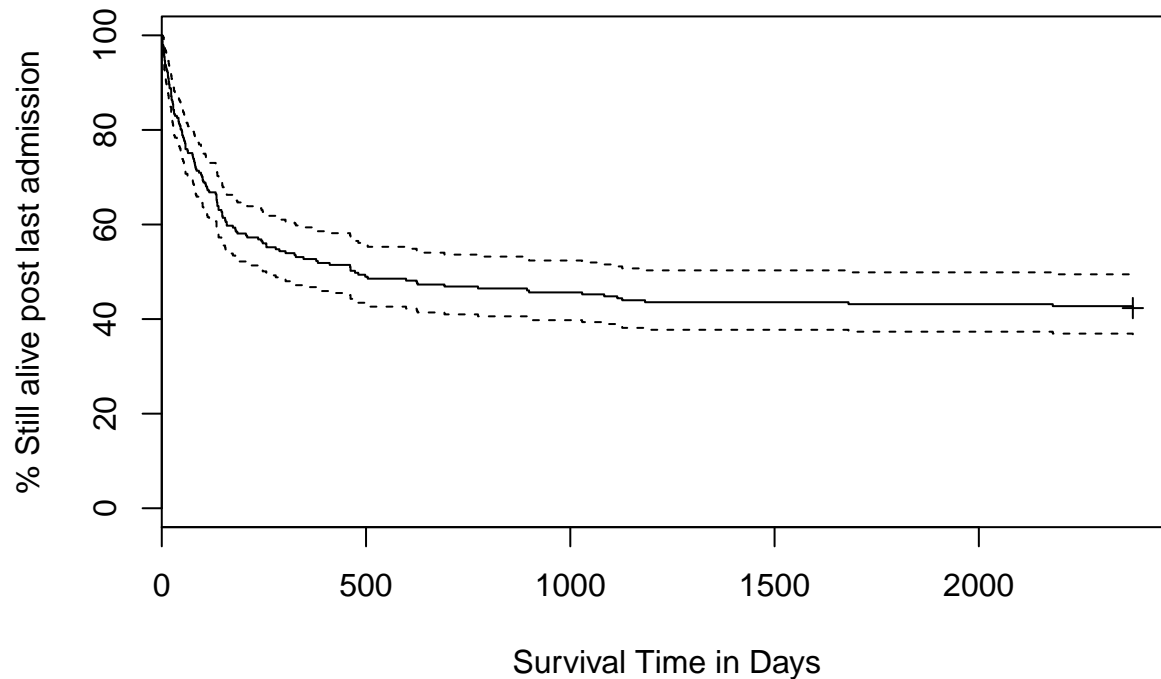
```
## ICUSTAY_SEQ ICUSTAY_LAST_FLG ICUSTAY_ADMIT_AGE
## Min. :1.000 N: 0 Min. : 21.51
## 1st Qu.:1.000 Y:245 1st Qu.: 50.95
## Median :1.000 Median : 63.57
## Mean :1.114 Mean : 63.73
## 3rd Qu.:1.000 3rd Qu.: 75.64
## Max. :3.000 Max. :200.40
##
```

```
## Min. 1st Qu. Median Mean 3rd Qu. Max.
## -177 58 462 1118 2377 2377
```

```
## SUBJECT_ID DOD EXPIRE_FLG HADM_ID HOSPITAL_SEQ HOSPITAL_LAST_FLG
## 1 22751 290631 Y 8335 3 Y
## HOSPITAL_DISCH_DT HOSPITAL_EXPIRE_FLG ICUSTAY_SEQ ICUSTAY_LAST_FLG
## 1 290808 N 1 Y
## ICUSTAY_ADMIT_AGE days
## 1 87.10149 -177
```

```
## SUBJECT_ID DOD EXPIRE_FLG HADM_ID
## Min. : 68 Min. :196514 N:102 Min. : 98
## 1st Qu.: 6828 1st Qu.:272463 Y:139 1st Qu.: 8848
## Median :12984 Median :386770 Median :16860
## Mean :13341 Mean :375754 Mean :15751
## 3rd Qu.:20181 3rd Qu.:469644 3rd Qu.:23270
## Max. :26523 Max. :560078 Max. :34632
## NA's :102
## HOSPITAL_SEQ HOSPITAL_LAST_FLG HOSPITAL_DISCH_DT HOSPITAL_EXPIRE_FLG
## Min. : 2.000 N: 0 Min. :196470 N:241
## 1st Qu.: 3.000 Y:241 1st Qu.:275647 Y: 0
## Median : 3.000 Median :391873
## Mean : 4.075 Mean :384290
## 3rd Qu.: 4.000 3rd Qu.:486407
## Max. :24.000 Max. :560054
##
## ICUSTAY_SEQ ICUSTAY_LAST_FLG ICUSTAY_ADMIT_AGE days
## Min. :1.000 N: 0 Min. : 21.51 Min. : 1
## 1st Qu.:1.000 Y:241 1st Qu.: 50.55 1st Qu.: 75
## Median :1.000 Median : 63.53 Median : 473
## Mean :1.116 Mean : 63.46 Mean :1137
## 3rd Qu.:1.000 3rd Qu.: 75.35 3rd Qu.:2377
## Max. :3.000 Max. :200.40 Max. :2377
##
```

Survival Post Last Hospital Admission



Linear Regressions on first admission (Ned's codes):

```
## The following object is masked _by_ .GlobalEnv:
##
##     dod

##
## Call:
## glm(formula = d.dat$dod ~ AIDS + ALCOHOL_ABUSE + BLOOD_LOSS_ANEMIA +
##     CARDIAC_ARRHYTHMIAS + CHRONIC_PULMONARY + COAGULOPATHY +
##     CONGESTIVE_HEART_FAILURE + DEFICIENCY_ANEMIAS + DEPRESSION +
##     DIABETES_COMPLICATED + DIABETES_UNCOMPLICATED + DRUG_ABUSE +
##     FLUID_ELECTROLYTE + HYPERTENSION + HYPOTHYROIDISM + LIVER_DISEASE +
##     LYMPHOMA + METASTATIC_CANCER + OBESITY + OTHER_NEUROLOGICAL +
##     PARALYSIS + PEPTIC_ULCER + PERIPHERAL_VASCULAR + PSYCHOSES +
##     PULMONARY_CIRCULATION + RENAL_FAILURE + RHEUMATOID_ARTHRITIS +
##     SOLID_TUMOR + VALVULAR_DISEASE + WEIGHT_LOSS, data = d.dat)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.9486  -0.4960   0.1938   0.3676   0.9279
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.540243   0.048095  11.233 < 2e-16 ***
## AIDS           0.362260   0.200013   1.811  0.07089 .
## ALCOHOL_ABUSE  -0.255973   0.112533  -2.275  0.02347 *
## BLOOD_LOSS_ANEMIA      NA         NA      NA      NA
```

```

## CARDIAC_ARRHYTHMIAS      0.157904    0.063444    2.489    0.01323 *
## CHRONIC_PULMONARY        0.156834    0.060309    2.600    0.00966 **
## COAGULOPATHY            -0.028709    0.083692   -0.343    0.73177
## CONGESTIVE_HEART_FAILURE  0.003281    0.056402    0.058    0.95365
## DEFICIENCY_ANEMIAS      -0.045921    0.074939   -0.613    0.54038
## DEPRESSION              -0.150944    0.113899   -1.325    0.18587
## DIABETES_COMPLICATED     0.074881    0.077318    0.968    0.33341
## DIABETES_UNCOMPLICATED  -0.029751    0.062597   -0.475    0.63486
## DRUG_ABUSE              -0.011370    0.141956   -0.080    0.93620
## FLUID_ELECTROLYTE        0.090359    0.048867    1.849    0.06520 .
## HYPERTENSION            -0.048980    0.055314   -0.885    0.37644
## HYPOTHYROIDISM           0.096396    0.093259    1.034    0.30195
## LIVER_DISEASE           -0.040274    0.089319   -0.451    0.65231
## LYMPHOMA                -0.035143    0.170633   -0.206    0.83693
## METASTATIC_CANCER        0.380053    0.160713    2.365    0.01853 *
## OBESITY                 -0.318738    0.183537   -1.737    0.08324 .
## OTHER_NEUROLOGICAL      -0.035444    0.139990   -0.253    0.80026
## PARALYSIS               -0.112880    0.340644   -0.331    0.74054
## PEPTIC_ULCER            -0.215844    0.333435   -0.647    0.51780
## PERIPHERAL_VASCULAR     -0.007144    0.090916   -0.079    0.93741
## PSYCHOSES                0.070416    0.122230    0.576    0.56489
## PULMONARY_CIRCULATION   -0.032972    0.129574   -0.254    0.79927
## RENAL_FAILURE           0.024778    0.074950    0.331    0.74113
## RHEUMATOID_ARTHRITIS    0.221515    0.141701    1.563    0.11881
## SOLID_TUMOR             0.127668    0.074285    1.719    0.08648 .
## VALVULAR_DISEASE        0.012191    0.088541    0.138    0.89056
## WEIGHT_LOSS             0.088770    0.115231    0.770    0.44155
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2168436)
##
## Null deviance: 96.172  on 417  degrees of freedom
## Residual deviance: 84.135  on 388  degrees of freedom
## AIC: 578.16
##
## Number of Fisher Scoring iterations: 2
##
## Call:
## glm(formula = d.dat$dod ~ AIDS * ALCOHOL_ABUSE * DEPRESSION *
##      DRUG_ABUSE * LIVER_DISEASE * OBESITY * PSYCHOSES, data = d.dat)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -0.7500  -0.6737   0.3263   0.3263   0.8000
##
## Coefficients: (106 not defined because of singularities)
##
## (Intercept)                Estimate
## AIDS                0.67372
## ALCOHOL_ABUSE        0.32628
## DEPRESSION          -0.38800
## DRUG_ABUSE           -0.36602
## LIVER_DISEASE        0.32628

```

## LIVER_DISEASE	-0.04214
## OBESITY	-0.47372
## PSYCHOSES	0.07628
## AIDS:ALCOHOL_ABUSE	0.38800
## AIDS:DEPRESSION	0.80816
## ALCOHOL_ABUSE:DEPRESSION	1.00000
## AIDS:DRUG_ABUSE	-0.32628
## ALCOHOL_ABUSE:DRUG_ABUSE	-0.61200
## DEPRESSION:DRUG_ABUSE	0.36602
## AIDS:LIVER_DISEASE	-0.40000
## ALCOHOL_ABUSE:LIVER_DISEASE	0.13142
## DEPRESSION:LIVER_DISEASE	NA
## DRUG_ABUSE:LIVER_DISEASE	-0.55786
## AIDS:OBESITY	NA
## ALCOHOL_ABUSE:OBESITY	NA
## DEPRESSION:OBESITY	1.16602
## DRUG_ABUSE:OBESITY	NA
## LIVER_DISEASE:OBESITY	-0.15786
## AIDS:PSYCHOSES	NA
## ALCOHOL_ABUSE:PSYCHOSES	-0.36200
## DEPRESSION:PSYCHOSES	0.11602
## DRUG_ABUSE:PSYCHOSES	NA
## LIVER_DISEASE:PSYCHOSES	0.29214
## OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE	NA
## AIDS:DEPRESSION:DRUG_ABUSE	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE	NA
## AIDS:DEPRESSION:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:OBESITY	NA
## AIDS:DEPRESSION:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:OBESITY	NA
## AIDS:DRUG_ABUSE:OBESITY	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY	NA
## DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY	NA
## DEPRESSION:LIVER_DISEASE:OBESITY	NA
## DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:PSYCHOSES	NA
## AIDS:DEPRESSION:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA

## AIDS:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:OBESITY:PSYCHOSES	NA
## DEPRESSION:OBESITY:PSYCHOSES	NA
## DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY	NA
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA

## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
##	Std. Error
## (Intercept)	0.02591
## AIDS	0.33435
## ALCOHOL_ABUSE	0.18005
## DEPRESSION	0.13329
## DRUG_ABUSE	0.33435
## LIVER_DISEASE	0.11121
## OBESITY	0.21241
## PSYCHOSES	0.13853
## AIDS:ALCOHOL_ABUSE	0.60479
## AIDS:DEPRESSION	0.98228
## ALCOHOL_ABUSE:DEPRESSION	0.81652
## AIDS:DRUG_ABUSE	0.66719
## ALCOHOL_ABUSE:DRUG_ABUSE	0.50463
## DEPRESSION:DRUG_ABUSE	0.59255
## AIDS:LIVER_DISEASE	0.77462
## ALCOHOL_ABUSE:LIVER_DISEASE	0.26813
## DEPRESSION:LIVER_DISEASE	NA
## DRUG_ABUSE:LIVER_DISEASE	0.40980
## AIDS:OBESITY	NA
## ALCOHOL_ABUSE:OBESITY	NA
## DEPRESSION:OBESITY	0.53334
## DRUG_ABUSE:OBESITY	NA
## LIVER_DISEASE:OBESITY	0.52825
## AIDS:PSYCHOSES	NA
## ALCOHOL_ABUSE:PSYCHOSES	0.52266
## DEPRESSION:PSYCHOSES	0.38393
## DRUG_ABUSE:PSYCHOSES	NA
## LIVER_DISEASE:PSYCHOSES	0.50311
## OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE	NA
## AIDS:DEPRESSION:DRUG_ABUSE	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE	NA
## AIDS:DEPRESSION:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE	NA

## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:OBESITY	NA
## AIDS:DEPRESSION:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:OBESITY	NA
## AIDS:DRUG_ABUSE:OBESITY	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY	NA
## DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY	NA
## DEPRESSION:LIVER_DISEASE:OBESITY	NA
## DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:PSYCHOSES	NA
## AIDS:DEPRESSION:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:OBESITY:PSYCHOSES	NA
## DEPRESSION:OBESITY:PSYCHOSES	NA
## DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY	NA
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES	NA

## AIDS:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
##	t value
## (Intercept)	26.001
## AIDS	0.976
## ALCOHOL_ABUSE	-2.155
## DEPRESSION	-2.746
## DRUG_ABUSE	0.976
## LIVER_DISEASE	-0.379
## OBESITY	-2.230
## PSYCHOSES	0.551
## AIDS:ALCOHOL_ABUSE	0.642
## AIDS:DEPRESSION	0.823
## ALCOHOL_ABUSE:DEPRESSION	1.225
## AIDS:DRUG_ABUSE	-0.489
## ALCOHOL_ABUSE:DRUG_ABUSE	-1.213
## DEPRESSION:DRUG_ABUSE	0.618
## AIDS:LIVER_DISEASE	-0.516
## ALCOHOL_ABUSE:LIVER_DISEASE	0.490
## DEPRESSION:LIVER_DISEASE	NA

## DRUG_ABUSE:LIVER_DISEASE	-1.361
## AIDS:OBESITY	NA
## ALCOHOL_ABUSE:OBESITY	NA
## DEPRESSION:OBESITY	2.186
## DRUG_ABUSE:OBESITY	NA
## LIVER_DISEASE:OBESITY	-0.299
## AIDS:PSYCHOSES	NA
## ALCOHOL_ABUSE:PSYCHOSES	-0.693
## DEPRESSION:PSYCHOSES	0.302
## DRUG_ABUSE:PSYCHOSES	NA
## LIVER_DISEASE:PSYCHOSES	0.581
## OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE	NA
## AIDS:DEPRESSION:DRUG_ABUSE	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE	NA
## AIDS:DEPRESSION:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:OBESITY	NA
## AIDS:DEPRESSION:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:OBESITY	NA
## AIDS:DRUG_ABUSE:OBESITY	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY	NA
## DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY	NA
## DEPRESSION:LIVER_DISEASE:OBESITY	NA
## DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:PSYCHOSES	NA
## AIDS:DEPRESSION:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:OBESITY:PSYCHOSES	NA
## DEPRESSION:OBESITY:PSYCHOSES	NA
## DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY	NA

## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA

## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
##	Pr(> t)
## (Intercept)	< 2e-16
## AIDS	0.32972
## ALCOHOL_ABUSE	0.03177
## DEPRESSION	0.00631
## DRUG_ABUSE	0.32972
## LIVER_DISEASE	0.70497
## OBESITY	0.02629
## PSYCHOSES	0.58218
## AIDS:ALCOHOL_ABUSE	0.52154
## AIDS:DEPRESSION	0.41115
## ALCOHOL_ABUSE:DEPRESSION	0.22141
## AIDS:DRUG_ABUSE	0.62508
## ALCOHOL_ABUSE:DRUG_ABUSE	0.22595
## DEPRESSION:DRUG_ABUSE	0.53712
## AIDS:LIVER_DISEASE	0.60588
## ALCOHOL_ABUSE:LIVER_DISEASE	0.62431
## DEPRESSION:LIVER_DISEASE	NA
## DRUG_ABUSE:LIVER_DISEASE	0.17419
## AIDS:OBESITY	NA
## ALCOHOL_ABUSE:OBESITY	NA
## DEPRESSION:OBESITY	0.02938
## DRUG_ABUSE:OBESITY	NA
## LIVER_DISEASE:OBESITY	0.76522
## AIDS:PSYCHOSES	NA
## ALCOHOL_ABUSE:PSYCHOSES	0.48896
## DEPRESSION:PSYCHOSES	0.76266
## DRUG_ABUSE:PSYCHOSES	NA
## LIVER_DISEASE:PSYCHOSES	0.56180
## OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE	NA
## AIDS:DEPRESSION:DRUG_ABUSE	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE	NA
## AIDS:DEPRESSION:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:OBESITY	NA
## AIDS:DEPRESSION:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:OBESITY	NA
## AIDS:DRUG_ABUSE:OBESITY	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY	NA
## DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY	NA
## DEPRESSION:LIVER_DISEASE:OBESITY	NA
## DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:PSYCHOSES	NA

## AIDS:DEPRESSION:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:OBESITY:PSYCHOSES	NA
## DEPRESSION:OBESITY:PSYCHOSES	NA
## DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY	NA
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:DEPRESSION:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES	NA
## AIDS:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES	NA
## AIDS:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY	NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY	NA

```

## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES NA
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES NA
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES NA
##
## (Intercept) ***
## AIDS
## ALCOHOL_ABUSE *
## DEPRESSION **
## DRUG_ABUSE
## LIVER_DISEASE
## OBESITY *
## PSYCHOSES
## AIDS:ALCOHOL_ABUSE
## AIDS:DEPRESSION
## ALCOHOL_ABUSE:DEPRESSION
## AIDS:DRUG_ABUSE
## ALCOHOL_ABUSE:DRUG_ABUSE
## DEPRESSION:DRUG_ABUSE
## AIDS:LIVER_DISEASE
## ALCOHOL_ABUSE:LIVER_DISEASE
## DEPRESSION:LIVER_DISEASE
## DRUG_ABUSE:LIVER_DISEASE
## AIDS:OBESITY
## ALCOHOL_ABUSE:OBESITY
## DEPRESSION:OBESITY *
## DRUG_ABUSE:OBESITY
## LIVER_DISEASE:OBESITY
## AIDS:PSYCHOSES
## ALCOHOL_ABUSE:PSYCHOSES
## DEPRESSION:PSYCHOSES
## DRUG_ABUSE:PSYCHOSES
## LIVER_DISEASE:PSYCHOSES
## OBESITY:PSYCHOSES

```

```

## AIDS:ALCOHOL_ABUSE:DEPRESSION
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE
## AIDS:DEPRESSION:DRUG_ABUSE
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE
## AIDS:DEPRESSION:LIVER_DISEASE
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE
## AIDS:DRUG_ABUSE:LIVER_DISEASE
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE
## AIDS:ALCOHOL_ABUSE:OBESITY
## AIDS:DEPRESSION:OBESITY
## ALCOHOL_ABUSE:DEPRESSION:OBESITY
## AIDS:DRUG_ABUSE:OBESITY
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY
## DEPRESSION:DRUG_ABUSE:OBESITY
## AIDS:LIVER_DISEASE:OBESITY
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY
## DEPRESSION:LIVER_DISEASE:OBESITY
## DRUG_ABUSE:LIVER_DISEASE:OBESITY
## AIDS:ALCOHOL_ABUSE:PSYCHOSES
## AIDS:DEPRESSION:PSYCHOSES
## ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES
## AIDS:DRUG_ABUSE:PSYCHOSES
## ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES
## DEPRESSION:DRUG_ABUSE:PSYCHOSES
## AIDS:LIVER_DISEASE:PSYCHOSES
## ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES
## DEPRESSION:LIVER_DISEASE:PSYCHOSES
## DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES
## AIDS:OBESITY:PSYCHOSES
## ALCOHOL_ABUSE:OBESITY:PSYCHOSES
## DEPRESSION:OBESITY:PSYCHOSES
## DRUG_ABUSE:OBESITY:PSYCHOSES
## LIVER_DISEASE:OBESITY:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY
## AIDS:ALCOHOL_ABUSE:DEPRESSION:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:PSYCHOSES
## AIDS:DEPRESSION:DRUG_ABUSE:PSYCHOSES
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES

```



```

## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:PSYCHOSES
## AIDS:DEPRESSION:LIVER_DISEASE:PSYCHOSES
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES
## AIDS:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:OBESITY:PSYCHOSES
## AIDS:DEPRESSION:OBESITY:PSYCHOSES
## ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES
## AIDS:DRUG_ABUSE:OBESITY:PSYCHOSES
## ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES
## DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES
## AIDS:LIVER_DISEASE:OBESITY:PSYCHOSES
## ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES
## DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DEPRESSION:OBESITY:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:OBESITY:PSYCHOSES
## AIDS:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## AIDS:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES
## ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES
## AIDS:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:OBESITY:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DEPRESSION:LIVER_DISEASE:OBESITY:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## AIDS:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## AIDS:ALCOHOL_ABUSE:DEPRESSION:DRUG_ABUSE:LIVER_DISEASE:OBESITY:PSYCHOSES
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for gaussian family taken to be 0.2222353)
##
##      Null deviance: 96.172  on 417  degrees of freedom
## Residual deviance: 88.005  on 396  degrees of freedom
## AIC: 580.95
##

```

Number of Fisher Scoring iterations: 2

Still to describe:

ICU first and last careunit and service

Comorbidities - BMI (too many missing values), break down and sum of comorbidities

Charting, changes to severity scores, SAPS-I and SOFA, through admissions ordered by HOSPITAL_SEQ: