R Notebook

library(readr)

## Warning: package 'readr' was built under R version 4.1.2

diabetic\_data <- read\_csv("diabetic\_data\_clean\_S1.csv")

## New names:  
## \* `` -> ...1

## Rows: 98815 Columns: 27

## -- Column specification --------------------------------------------------------  
## Delimiter: ","  
## chr (19): race, gender, age, diag\_1, diag\_2, diag\_3, A1Cresult, metformin, g...  
## dbl (8): ...1, encounter\_id, patient\_nbr, time\_in\_hospital, num\_lab\_procedu...

##   
## i Use `spec()` to retrieve the full column specification for this data.  
## i Specify the column types or set `show\_col\_types = FALSE` to quiet this message.

diabetic\_data<-na.omit(diabetic\_data)

fin=NULL  
for (i in unique(diabetic\_data$readmitted)) {  
 sub=subset(diabetic\_data, diabetic\_data$readmitted==i)  
 sam=sub[sample(nrow(sub), 11000), ]  
 fin=rbind(fin, sam)}  
table(fin$readmitted)

##   
## <30 >30 NO   
## 11000 11000 11000

fin$readmitted[fin$readmitted=='<30'] <-0  
fin$readmitted[fin$readmitted=='>30'] <-1  
fin$readmitted[fin$readmitted=='NO'] <-NA

fin = na.omit(fin)

fin$readmitted = as.numeric(fin$readmitted)  
fullmod = glm(readmitted~.,data = fin,family=binomial)  
summary(fullmod)

##   
## Call:  
## glm(formula = readmitted ~ ., family = binomial, data = fin)  
##   
## Deviance Residuals:   
## Min 1Q Median 3Q Max   
## -1.93477 -1.16198 -0.02397 1.12703 1.89421   
##   
## Coefficients:  
## Estimate Std. Error z value  
## (Intercept) 2.570e+00 1.403e+00 1.832  
## ...1 9.457e-06 2.046e-06 4.622  
## encounter\_id -3.164e-09 5.592e-10 -5.658  
## patient\_nbr 1.936e-09 4.310e-10 4.491  
## raceCaucasian -1.134e-02 3.674e-02 -0.309  
## raceOther -6.276e-02 6.910e-02 -0.908  
## genderMale -8.286e-02 2.809e-02 -2.949  
## age[10-20) -7.514e-01 1.139e+00 -0.660  
## age[20-30) -1.691e+00 1.125e+00 -1.504  
## age[30-40) -1.480e+00 1.122e+00 -1.319  
## age[40-50) -1.257e+00 1.121e+00 -1.121  
## age[50-60) -1.186e+00 1.121e+00 -1.058  
## age[60-70) -1.283e+00 1.121e+00 -1.145  
## age[70-80) -1.279e+00 1.121e+00 -1.141  
## age[80-90) -1.285e+00 1.121e+00 -1.146  
## age[90-100) -1.450e+00 1.124e+00 -1.290  
## time\_in\_hospital -1.175e-02 5.621e-03 -2.089  
## num\_lab\_procedures -7.161e-04 8.153e-04 -0.878  
## num\_procedures 1.691e-02 9.663e-03 1.750  
## num\_medications -4.895e-03 2.678e-03 -1.828  
## diag\_1Diabetes -4.176e-02 5.725e-02 -0.729  
## diag\_1Digestive -1.285e-01 7.706e-02 -1.667  
## diag\_1Genitourinary 8.138e-02 6.800e-02 1.197  
## diag\_1Injury -7.281e-02 6.076e-02 -1.198  
## diag\_1Musculoskeletal 1.501e-01 7.637e-02 1.966  
## diag\_1Neoplasms -1.414e-01 9.426e-02 -1.500  
## diag\_1Other 7.641e-02 4.038e-02 1.892  
## diag\_1Respiratory 2.351e-01 4.612e-02 5.097  
## diag\_2Diabetes -3.764e-02 5.048e-02 -0.746  
## diag\_2Digestive -1.308e-01 1.029e-01 -1.271  
## diag\_2Genitourinary 5.100e-02 5.382e-02 0.948  
## diag\_2Injury 1.119e-02 9.711e-02 0.115  
## diag\_2Musculoskeletal 1.573e-01 1.128e-01 1.395  
## diag\_2Neoplasms -4.821e-01 9.626e-02 -5.009  
## diag\_2Other 2.310e-02 3.815e-02 0.605  
## diag\_2Respiratory 1.394e-01 4.934e-02 2.826  
## diag\_3Diabetes -5.675e-02 4.412e-02 -1.286  
## diag\_3Digestive -2.046e-01 1.184e-01 -1.729  
## diag\_3Genitourinary -1.025e-01 5.712e-02 -1.795  
## diag\_3Injury -9.384e-02 1.089e-01 -0.862  
## diag\_3Musculoskeletal -5.726e-02 1.069e-01 -0.536  
## diag\_3Neoplasms -3.602e-01 1.082e-01 -3.331  
## diag\_3Other -5.152e-02 3.642e-02 -1.415  
## diag\_3Respiratory -8.426e-02 5.599e-02 -1.505  
## number\_diagnoses 8.968e-03 9.118e-03 0.983  
## A1Cresult>8 5.912e-02 9.014e-02 0.656  
## A1CresultNone -1.108e-01 7.606e-02 -1.457  
## A1CresultNorm -4.558e-02 9.918e-02 -0.460  
## metforminNo 3.045e-01 2.004e-01 1.520  
## metforminSteady 3.931e-01 2.011e-01 1.955  
## metforminUp 5.401e-01 2.461e-01 2.194  
## glipizideNo 2.043e-01 1.735e-01 1.178  
## glipizideSteady 2.236e-01 1.745e-01 1.281  
## glipizideUp 6.898e-02 2.276e-01 0.303  
## glyburideNo -2.161e-01 2.004e-01 -1.078  
## glyburideSteady -1.920e-01 2.019e-01 -0.951  
## glyburideUp -1.620e-01 2.500e-01 -0.648  
## pioglitazoneNo 3.831e-02 3.504e-01 0.109  
## pioglitazoneSteady 1.062e-01 3.529e-01 0.301  
## pioglitazoneUp -3.508e-02 4.467e-01 -0.079  
## rosiglitazoneNo -1.354e+00 6.692e-01 -2.023  
## rosiglitazoneSteady -1.304e+00 6.711e-01 -1.943  
## rosiglitazoneUp -1.586e+00 7.609e-01 -2.084  
## insulinNo 2.267e-01 6.944e-02 3.265  
## insulinSteady 1.499e-01 5.428e-02 2.761  
## insulinUp 6.521e-02 5.427e-02 1.202  
## changeNo -9.171e-02 4.977e-02 -1.843  
## diabetesMedYes -3.302e-02 4.991e-02 -0.662  
## admission\_sourceOther -2.052e-01 5.475e-02 -3.749  
## admission\_sourcePhysician and Other Referrals -9.877e-02 4.026e-02 -2.453  
## discharge\_dispositionOther -5.372e-01 3.241e-02 -16.576  
## admission\_typeEmergency / Urgent -4.585e-02 4.840e-02 -0.947  
## admission\_typeOther 2.513e-01 6.357e-02 3.953  
## Pr(>|z|)   
## (Intercept) 0.066945 .   
## ...1 3.79e-06 \*\*\*  
## encounter\_id 1.53e-08 \*\*\*  
## patient\_nbr 7.08e-06 \*\*\*  
## raceCaucasian 0.757599   
## raceOther 0.363728   
## genderMale 0.003184 \*\*   
## age[10-20) 0.509393   
## age[20-30) 0.132694   
## age[30-40) 0.187312   
## age[40-50) 0.262320   
## age[50-60) 0.290178   
## age[60-70) 0.252182   
## age[70-80) 0.253825   
## age[80-90) 0.251632   
## age[90-100) 0.197085   
## time\_in\_hospital 0.036673 \*   
## num\_lab\_procedures 0.379761   
## num\_procedures 0.080047 .   
## num\_medications 0.067588 .   
## diag\_1Diabetes 0.465819   
## diag\_1Digestive 0.095454 .   
## diag\_1Genitourinary 0.231373   
## diag\_1Injury 0.230794   
## diag\_1Musculoskeletal 0.049355 \*   
## diag\_1Neoplasms 0.133531   
## diag\_1Other 0.058452 .   
## diag\_1Respiratory 3.45e-07 \*\*\*  
## diag\_2Diabetes 0.455941   
## diag\_2Digestive 0.203640   
## diag\_2Genitourinary 0.343312   
## diag\_2Injury 0.908241   
## diag\_2Musculoskeletal 0.163103   
## diag\_2Neoplasms 5.47e-07 \*\*\*  
## diag\_2Other 0.544918   
## diag\_2Respiratory 0.004712 \*\*   
## diag\_3Diabetes 0.198386   
## diag\_3Digestive 0.083882 .   
## diag\_3Genitourinary 0.072658 .   
## diag\_3Injury 0.388956   
## diag\_3Musculoskeletal 0.592014   
## diag\_3Neoplasms 0.000866 \*\*\*  
## diag\_3Other 0.157129   
## diag\_3Respiratory 0.132341   
## number\_diagnoses 0.325373   
## A1Cresult>8 0.511908   
## A1CresultNone 0.145063   
## A1CresultNorm 0.645848   
## metforminNo 0.128574   
## metforminSteady 0.050561 .   
## metforminUp 0.028215 \*   
## glipizideNo 0.238925   
## glipizideSteady 0.200077   
## glipizideUp 0.761795   
## glyburideNo 0.280989   
## glyburideSteady 0.341582   
## glyburideUp 0.517104   
## pioglitazoneNo 0.912923   
## pioglitazoneSteady 0.763397   
## pioglitazoneUp 0.937410   
## rosiglitazoneNo 0.043108 \*   
## rosiglitazoneSteady 0.052037 .   
## rosiglitazoneUp 0.037132 \*   
## insulinNo 0.001095 \*\*   
## insulinSteady 0.005759 \*\*   
## insulinUp 0.229503   
## changeNo 0.065378 .   
## diabetesMedYes 0.508157   
## admission\_sourceOther 0.000178 \*\*\*  
## admission\_sourcePhysician and Other Referrals 0.014153 \*   
## discharge\_dispositionOther < 2e-16 \*\*\*  
## admission\_typeEmergency / Urgent 0.343500   
## admission\_typeOther 7.70e-05 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## (Dispersion parameter for binomial family taken to be 1)  
##   
## Null deviance: 30498 on 21999 degrees of freedom  
## Residual deviance: 29764 on 21927 degrees of freedom  
## AIC: 29910  
##   
## Number of Fisher Scoring iterations: 4

nothing <- glm(readmitted ~ 1,data=fin,family=binomial)  
forwards = step(nothing,  
scope=list(lower=formula(nothing),upper=formula(fullmod)), direction="forward")

## Start: AIC=30500.48  
## readmitted ~ 1  
##   
## Df Deviance AIC  
## + discharge\_disposition 1 30154 30158  
## + diag\_1 8 30411 30429  
## + diag\_2 8 30437 30455  
## + time\_in\_hospital 1 30453 30457  
## + age 9 30440 30460  
## + patient\_nbr 1 30464 30468  
## + diag\_3 8 30460 30478  
## + metformin 3 30472 30480  
## + insulin 3 30474 30482  
## + admission\_type 2 30484 30490  
## + num\_medications 1 30486 30490  
## + admission\_source 2 30487 30493  
## + A1Cresult 3 30486 30494  
## + rosiglitazone 3 30488 30496  
## + gender 1 30496 30500  
## + glipizide 3 30492 30500  
## + num\_lab\_procedures 1 30496 30500  
## <none> 30499 30501  
## + pioglitazone 3 30493 30501  
## + encounter\_id 1 30498 30502  
## + ...1 1 30498 30502  
## + diabetesMed 1 30498 30502  
## + race 2 30496 30502  
## + number\_diagnoses 1 30498 30502  
## + change 1 30498 30502  
## + num\_procedures 1 30498 30502  
## + glyburide 3 30495 30503  
##   
## Step: AIC=30158  
## readmitted ~ discharge\_disposition  
##   
## Df Deviance AIC  
## + diag\_1 8 30071 30091  
## + diag\_2 8 30081 30101  
## + age 9 30105 30127  
## + diag\_3 8 30115 30135  
## + admission\_type 2 30130 30138  
## + patient\_nbr 1 30133 30139  
## + insulin 3 30129 30139  
## + metformin 3 30131 30141  
## + time\_in\_hospital 1 30144 30150  
## + gender 1 30147 30153  
## + A1Cresult 3 30143 30153  
## + rosiglitazone 3 30144 30154  
## + encounter\_id 1 30149 30155  
## + admission\_source 2 30148 30156  
## + num\_medications 1 30151 30157  
## <none> 30154 30158  
## + diabetesMed 1 30153 30159  
## + glyburide 3 30149 30159  
## + num\_lab\_procedures 1 30153 30159  
## + num\_procedures 1 30153 30159  
## + pioglitazone 3 30149 30159  
## + number\_diagnoses 1 30154 30160  
## + race 2 30152 30160  
## + ...1 1 30154 30160  
## + glipizide 3 30150 30160  
## + change 1 30154 30160  
##   
## Step: AIC=30090.86  
## readmitted ~ discharge\_disposition + diag\_1  
##   
## Df Deviance AIC  
## + diag\_2 8 30018 30054  
## + age 9 30028 30066  
## + admission\_type 2 30049 30073  
## + patient\_nbr 1 30051 30073  
## + insulin 3 30048 30074  
## + diag\_3 8 30042 30078  
## + metformin 3 30052 30078  
## + time\_in\_hospital 1 30062 30084  
## + A1Cresult 3 30059 30085  
## + encounter\_id 1 30065 30087  
## + num\_medications 1 30065 30087  
## + gender 1 30065 30087  
## + rosiglitazone 3 30062 30088  
## + admission\_source 2 30066 30090  
## <none> 30071 30091  
## + diabetesMed 1 30069 30091  
## + ...1 1 30070 30092  
## + num\_lab\_procedures 1 30070 30092  
## + glyburide 3 30066 30092  
## + number\_diagnoses 1 30071 30093  
## + num\_procedures 1 30071 30093  
## + change 1 30071 30093  
## + race 2 30069 30093  
## + pioglitazone 3 30067 30093  
## + glipizide 3 30068 30094  
##   
## Step: AIC=30053.99  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2  
##   
## Df Deviance AIC  
## + age 9 29975 30029  
## + patient\_nbr 1 29998 30036  
## + insulin 3 29994 30036  
## + admission\_type 2 29996 30036  
## + metformin 3 29999 30041  
## + time\_in\_hospital 1 30008 30046  
## + num\_medications 1 30010 30048  
## + A1Cresult 3 30007 30049  
## + encounter\_id 1 30011 30049  
## + gender 1 30013 30051  
## + rosiglitazone 3 30009 30051  
## + diag\_3 8 30000 30052  
## + admission\_source 2 30013 30053  
## <none> 30018 30054  
## + diabetesMed 1 30016 30054  
## + ...1 1 30017 30055  
## + num\_lab\_procedures 1 30017 30055  
## + glyburide 3 30014 30056  
## + num\_procedures 1 30018 30056  
## + change 1 30018 30056  
## + number\_diagnoses 1 30018 30056  
## + pioglitazone 3 30014 30056  
## + race 2 30016 30056  
## + glipizide 3 30015 30057  
##   
## Step: AIC=30029.34  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age  
##   
## Df Deviance AIC  
## + patient\_nbr 1 29954 30010  
## + admission\_type 2 29954 30012  
## + insulin 3 29953 30013  
## + metformin 3 29958 30018  
## + time\_in\_hospital 1 29964 30020  
## + num\_medications 1 29965 30021  
## + gender 1 29968 30024  
## + encounter\_id 1 29969 30025  
## + A1Cresult 3 29965 30025  
## + rosiglitazone 3 29967 30027  
## + diag\_3 8 29957 30027  
## + admission\_source 2 29971 30029  
## + diabetesMed 1 29973 30029  
## <none> 29975 30029  
## + ...1 1 29974 30030  
## + num\_lab\_procedures 1 29974 30030  
## + number\_diagnoses 1 29975 30031  
## + num\_procedures 1 29975 30031  
## + change 1 29975 30031  
## + glyburide 3 29971 30031  
## + race 2 29974 30032  
## + pioglitazone 3 29972 30032  
## + glipizide 3 29973 30033  
##   
## Step: AIC=30010.35  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr  
##   
## Df Deviance AIC  
## + encounter\_id 1 29928 29986  
## + insulin 3 29930 29992  
## + admission\_type 2 29932 29992  
## + metformin 3 29937 29999  
## + ...1 1 29942 30000  
## + num\_medications 1 29943 30001  
## + time\_in\_hospital 1 29944 30002  
## + gender 1 29947 30005  
## + A1Cresult 3 29945 30007  
## + diag\_3 8 29935 30007  
## + rosiglitazone 3 29946 30008  
## + diabetesMed 1 29952 30010  
## <none> 29954 30010  
## + number\_diagnoses 1 29953 30011  
## + num\_lab\_procedures 1 29953 30011  
## + glyburide 3 29949 30011  
## + admission\_source 2 29952 30012  
## + change 1 29954 30012  
## + num\_procedures 1 29954 30012  
## + race 2 29953 30013  
## + pioglitazone 3 29952 30014  
## + glipizide 3 29952 30014  
##   
## Step: AIC=29985.78  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id  
##   
## Df Deviance AIC  
## + ...1 1 29905 29965  
## + insulin 3 29909 29973  
## + metformin 3 29909 29973  
## + time\_in\_hospital 1 29914 29974  
## + admission\_type 2 29914 29976  
## + num\_medications 1 29919 29979  
## + gender 1 29920 29980  
## + A1Cresult 3 29918 29982  
## + admission\_source 2 29922 29984  
## + rosiglitazone 3 29920 29984  
## + diag\_3 8 29910 29984  
## <none> 29928 29986  
## + num\_lab\_procedures 1 29926 29986  
## + diabetesMed 1 29926 29986  
## + number\_diagnoses 1 29928 29988  
## + change 1 29928 29988  
## + num\_procedures 1 29928 29988  
## + glyburide 3 29924 29988  
## + pioglitazone 3 29925 29989  
## + race 2 29927 29989  
## + glipizide 3 29925 29989  
##   
## Step: AIC=29965.08  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1  
##   
## Df Deviance AIC  
## + insulin 3 29883 29949  
## + admission\_type 2 29888 29952  
## + metformin 3 29887 29953  
## + time\_in\_hospital 1 29893 29955  
## + num\_medications 1 29896 29958  
## + gender 1 29898 29960  
## + A1Cresult 3 29895 29961  
## + diag\_3 8 29887 29963  
## + rosiglitazone 3 29898 29964  
## <none> 29905 29965  
## + diabetesMed 1 29903 29965  
## + admission\_source 2 29901 29965  
## + num\_lab\_procedures 1 29904 29966  
## + glyburide 3 29901 29967  
## + number\_diagnoses 1 29905 29967  
## + change 1 29905 29967  
## + num\_procedures 1 29905 29967  
## + pioglitazone 3 29902 29968  
## + glipizide 3 29902 29968  
## + race 2 29904 29968  
##   
## Step: AIC=29949.03  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin  
##   
## Df Deviance AIC  
## + admission\_type 2 29864 29934  
## + change 1 29871 29939  
## + metformin 3 29867 29939  
## + time\_in\_hospital 1 29874 29942  
## + A1Cresult 3 29871 29943  
## + gender 1 29876 29944  
## + num\_medications 1 29879 29947  
## + diag\_3 8 29866 29948  
## + rosiglitazone 3 29876 29948  
## <none> 29883 29949  
## + admission\_source 2 29879 29949  
## + diabetesMed 1 29882 29950  
## + num\_lab\_procedures 1 29882 29950  
## + number\_diagnoses 1 29883 29951  
## + num\_procedures 1 29883 29951  
## + glyburide 3 29880 29952  
## + race 2 29882 29952  
## + pioglitazone 3 29881 29953  
## + glipizide 3 29881 29953  
##   
## Step: AIC=29934.27  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type  
##   
## Df Deviance AIC  
## + admission\_source 2 29848 29922  
## + change 1 29851 29923  
## + metformin 3 29848 29924  
## + time\_in\_hospital 1 29856 29928  
## + A1Cresult 3 29852 29928  
## + gender 1 29857 29929  
## + num\_medications 1 29860 29932  
## + rosiglitazone 3 29857 29933  
## + diag\_3 8 29847 29933  
## <none> 29864 29934  
## + diabetesMed 1 29863 29935  
## + num\_lab\_procedures 1 29864 29936  
## + num\_procedures 1 29864 29936  
## + number\_diagnoses 1 29864 29936  
## + glyburide 3 29861 29937  
## + race 2 29863 29937  
## + pioglitazone 3 29862 29938  
## + glipizide 3 29862 29938  
##   
## Step: AIC=29922.06  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source  
##   
## Df Deviance AIC  
## + change 1 29835 29911  
## + metformin 3 29832 29912  
## + time\_in\_hospital 1 29840 29916  
## + gender 1 29841 29917  
## + A1Cresult 3 29837 29917  
## + num\_medications 1 29844 29920  
## + rosiglitazone 3 29841 29921  
## + diag\_3 8 29831 29921  
## + num\_lab\_procedures 1 29846 29922  
## <none> 29848 29922  
## + diabetesMed 1 29847 29923  
## + num\_procedures 1 29848 29924  
## + number\_diagnoses 1 29848 29924  
## + glyburide 3 29845 29925  
## + race 2 29847 29925  
## + pioglitazone 3 29845 29925  
## + glipizide 3 29846 29926  
##   
## Step: AIC=29910.87  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source + change  
##   
## Df Deviance AIC  
## + time\_in\_hospital 1 29826 29904  
## + gender 1 29828 29906  
## + num\_medications 1 29829 29907  
## + A1Cresult 3 29825 29907  
## + metformin 3 29826 29908  
## + diag\_3 8 29818 29910  
## + num\_lab\_procedures 1 29833 29911  
## <none> 29835 29911  
## + rosiglitazone 3 29829 29911  
## + num\_procedures 1 29835 29913  
## + number\_diagnoses 1 29835 29913  
## + diabetesMed 1 29835 29913  
## + glipizide 3 29831 29913  
## + race 2 29834 29914  
## + pioglitazone 3 29834 29916  
## + glyburide 3 29834 29916  
##   
## Step: AIC=29904.15  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source + change + time\_in\_hospital  
##   
## Df Deviance AIC  
## + gender 1 29819 29899  
## + A1Cresult 3 29815 29899  
## + metformin 3 29817 29901  
## + diag\_3 8 29810 29904  
## <none> 29826 29904  
## + num\_medications 1 29825 29905  
## + num\_procedures 1 29825 29905  
## + rosiglitazone 3 29821 29905  
## + num\_lab\_procedures 1 29826 29906  
## + number\_diagnoses 1 29826 29906  
## + diabetesMed 1 29826 29906  
## + glipizide 3 29823 29907  
## + race 2 29825 29907  
## + glyburide 3 29825 29909  
## + pioglitazone 3 29825 29909  
##   
## Step: AIC=29898.61  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source + change + time\_in\_hospital + gender  
##   
## Df Deviance AIC  
## + A1Cresult 3 29807 29893  
## + metformin 3 29810 29896  
## + diag\_3 8 29802 29898  
## + num\_medications 1 29817 29899  
## <none> 29819 29899  
## + num\_procedures 1 29817 29899  
## + rosiglitazone 3 29813 29899  
## + num\_lab\_procedures 1 29818 29900  
## + number\_diagnoses 1 29818 29900  
## + diabetesMed 1 29819 29901  
## + glipizide 3 29815 29901  
## + race 2 29818 29902  
## + glyburide 3 29818 29904  
## + pioglitazone 3 29818 29904  
##   
## Step: AIC=29893.29  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source + change + time\_in\_hospital + gender + A1Cresult  
##   
## Df Deviance AIC  
## + metformin 3 29799 29891  
## + diag\_3 8 29791 29893  
## + num\_medications 1 29805 29893  
## <none> 29807 29893  
## + num\_lab\_procedures 1 29805 29893  
## + num\_procedures 1 29806 29894  
## + rosiglitazone 3 29802 29894  
## + number\_diagnoses 1 29807 29895  
## + diabetesMed 1 29807 29895  
## + glipizide 3 29804 29896  
## + race 2 29806 29896  
## + glyburide 3 29806 29898  
## + pioglitazone 3 29807 29899  
##   
## Step: AIC=29891.22  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source + change + time\_in\_hospital + gender + A1Cresult +   
## metformin  
##   
## Df Deviance AIC  
## + num\_medications 1 29797 29891  
## <none> 29799 29891  
## + diag\_3 8 29783 29891  
## + num\_procedures 1 29797 29891  
## + num\_lab\_procedures 1 29797 29891  
## + rosiglitazone 3 29794 29892  
## + number\_diagnoses 1 29799 29893  
## + diabetesMed 1 29799 29893  
## + glipizide 3 29796 29894  
## + race 2 29798 29894  
## + glyburide 3 29798 29896  
## + pioglitazone 3 29798 29896  
##   
## Step: AIC=29891.17  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source + change + time\_in\_hospital + gender + A1Cresult +   
## metformin + num\_medications  
##   
## Df Deviance AIC  
## + num\_procedures 1 29794 29890  
## + diag\_3 8 29781 29891  
## <none> 29797 29891  
## + rosiglitazone 3 29792 29892  
## + num\_lab\_procedures 1 29796 29892  
## + number\_diagnoses 1 29796 29892  
## + diabetesMed 1 29797 29893  
## + glipizide 3 29794 29894  
## + race 2 29796 29894  
## + glyburide 3 29796 29896  
## + pioglitazone 3 29796 29896  
##   
## Step: AIC=29890.06  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source + change + time\_in\_hospital + gender + A1Cresult +   
## metformin + num\_medications + num\_procedures  
##   
## Df Deviance AIC  
## + diag\_3 8 29778 29890  
## <none> 29794 29890  
## + rosiglitazone 3 29788 29890  
## + num\_lab\_procedures 1 29793 29891  
## + number\_diagnoses 1 29793 29891  
## + diabetesMed 1 29794 29892  
## + glipizide 3 29791 29893  
## + race 2 29793 29893  
## + glyburide 3 29793 29895  
## + pioglitazone 3 29793 29895  
##   
## Step: AIC=29889.95  
## readmitted ~ discharge\_disposition + diag\_1 + diag\_2 + age +   
## patient\_nbr + encounter\_id + ...1 + insulin + admission\_type +   
## admission\_source + change + time\_in\_hospital + gender + A1Cresult +   
## metformin + num\_medications + num\_procedures + diag\_3  
##   
## Df Deviance AIC  
## <none> 29778 29890  
## + rosiglitazone 3 29772 29890  
## + number\_diagnoses 1 29777 29891  
## + num\_lab\_procedures 1 29777 29891  
## + diabetesMed 1 29778 29892  
## + glipizide 3 29775 29893  
## + race 2 29777 29893  
## + glyburide 3 29777 29895  
## + pioglitazone 3 29777 29895