

# Programming in SAS

## 1. Stepwise Regression

```
PROC IMPORT OUT = data
    DATAFILE=
"/folders/myfolders/bm1_sas/cleaned_data_for_analyses.csv"
    DBMS=CSV REPLACE;
    GETNAMES=YES;
    DATAROW=2;
RUN;

*stepwise selection with slstay = 0.05;
*variables selected: is30dayreadmit cindex evisit age insurancetype
temperature_cat
heartrate_transformed respirationrate_transformed mean_arterial_pressure;
proc glmselect data=data;
class is30dayreadmit(ref='0') cindex(ref="normal") evisit(ref='0')
icu_flag(ref='0')
gender race(ref="White") religion(ref="Christian") maritalstatus
insurancetype(ref="Private")
o2sat_cat(ref="normal") temperature_cat(ref="normal");
model log_length_of_stay = is30dayreadmit cindex
evisit icu_flag age gender race religion
maritalstatus insurancetype bmi
o2sat_cat temperature_cat heartrate_transformed
respirationrate_transformed mean_arterial_pressure /
selection=stepwise(select = sl) slstay = 0.05 stats = all;
run;

*stepwise selection with slstay = 0.10;
*variables selected: is30dayreadmit cindex evisit age gender marital status
insurancetype temperature_cat
heartrate_transformed respirationrate_transformed mean_arterial_pressure;
proc glmselect data=data;
class is30dayreadmit(ref='0') cindex(ref="normal") evisit(ref='0')
icu_flag(ref='0')
gender race(ref="White") religion(ref="Christian") maritalstatus
insurancetype(ref="Private")
o2sat_cat(ref="normal") temperature_cat(ref="normal");
model log_length_of_stay = is30dayreadmit cindex
evisit icu_flag age gender race religion
maritalstatus insurancetype bmi
o2sat_cat temperature_cat heartrate_transformed
respirationrate_transformed mean_arterial_pressure /
selection=stepwise(select = sl) slstay = 0.10 stats = all;
run;
```

## 2. Stepwise Regression after Removing Outliers

```
proc glmselect data=no_outliers;
class is30dayreadmit(ref='0') cindex(ref="normal") evisit(ref='0')
icu_flag(ref='0')
gender race(ref="White") religion(ref="Christian") maritalstatus
insurancetype(ref="Private")
o2sat_cat(ref="normal") temperature_cat(ref="normal");
model log_length_of_stay = is30dayreadmit cindex
evisit icu_flag age gender race religion
maritalstatus insurancetype bmi
o2sat_cat temperature_cat heartrate_transformed
respirationrate_transformed mean_arterial_pressure /
selection=stepwise (select = sl) slstay = 0.05 stats = all;
run;
```

## 3. Forward Elimination after Removing Outliers

```
proc glmselect data=no_outliers;
class is30dayreadmit(ref='0') cindex(ref="normal") evisit(ref='0')
icu_flag(ref='0')
gender race(ref="White") religion(ref="Christian") maritalstatus
insurancetype(ref="Private")
o2sat_cat(ref="normal") temperature_cat(ref="normal");
model log_length_of_stay = is30dayreadmit cindex
evisit icu_flag age gender race religion
maritalstatus insurancetype bmi
o2sat_cat temperature_cat heartrate_transformed
respirationrate_transformed mean_arterial_pressure /
selection=forward (select = sl) slstay = 0.05 stats = all;
run;
```

## 4. Backward Elimination after Removing Outliers

```
proc glmselect data=no_outliers;
class is30dayreadmit(ref='0') cindex(ref="normal") evisit(ref='0')
icu_flag(ref='0')
gender race(ref="White") religion(ref="Christian") maritalstatus
insurancetype(ref="Private")
o2sat_cat(ref="normal") temperature_cat(ref="normal");
model log_length_of_stay = is30dayreadmit cindex
evisit icu_flag age gender race religion
maritalstatus insurancetype bmi
o2sat_cat temperature_cat heartrate_transformed
respirationrate_transformed mean_arterial_pressure /
selection=backward (select = sl) slstay = 0.05 stats = all;
run;
```