LM Regression

Load Data

```
rm(list = ls())
setwd("~/Downloads/BLMS/BLMS")
dataset = readRDS("dataset.rds")
library(ggplot2)
```

Estimate the number of new deaths cases 8 days ahead

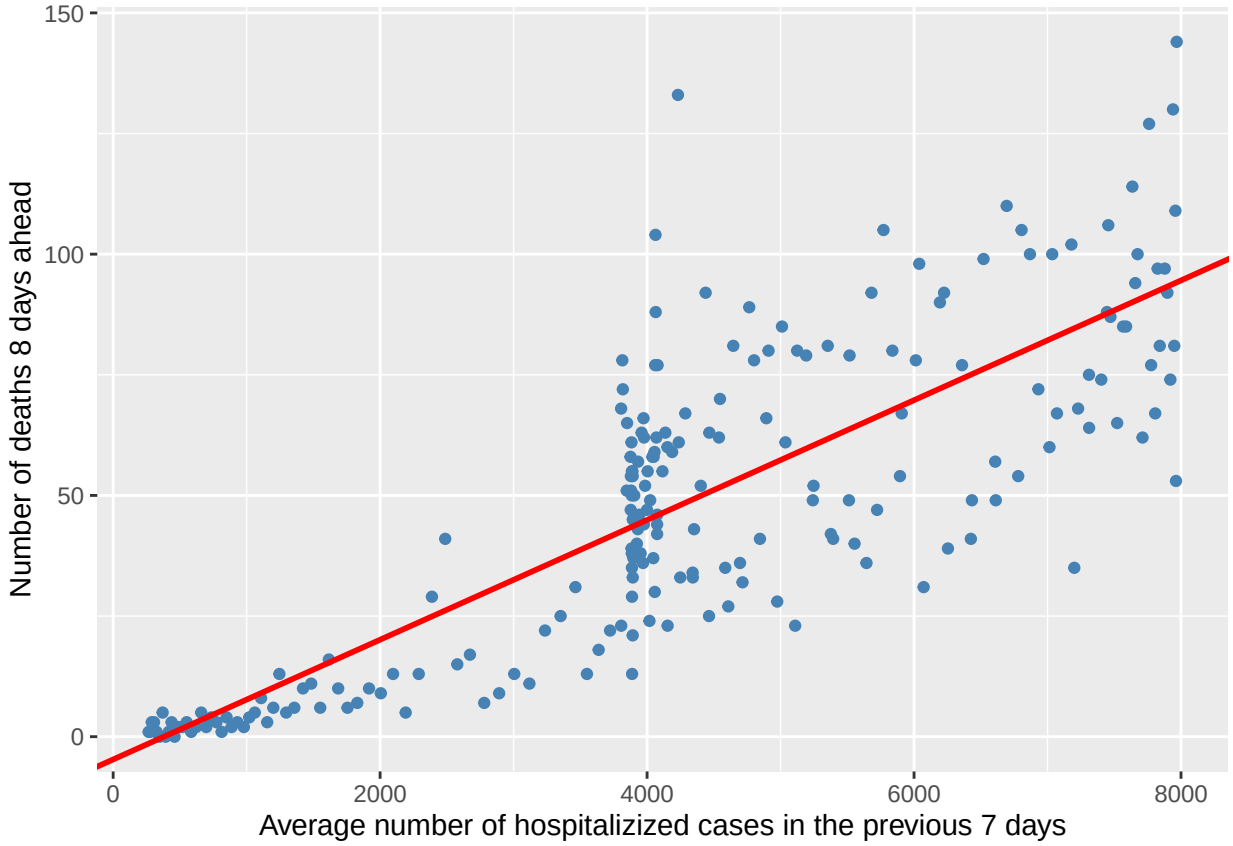
deathsH8 vs newpos_av7D

```
deathsH8.lm = lm(deathsH8 ~ newpos_av7D, data=dataset)
beta = coef(deathsH8.lm)
ggplot(data=dataset, aes(x= newpos_av7D, y = deathsH8))+
  geom_point(color = "steelblue")+
  geom_abline(intercept = beta[1], slope=beta[2], size =1, col="red")+
  xlab("Average number of positives in the previous 7 days")+
  ylab("Number of deaths 8 days ahead")
```

deathsH8 vs hosp_av7D

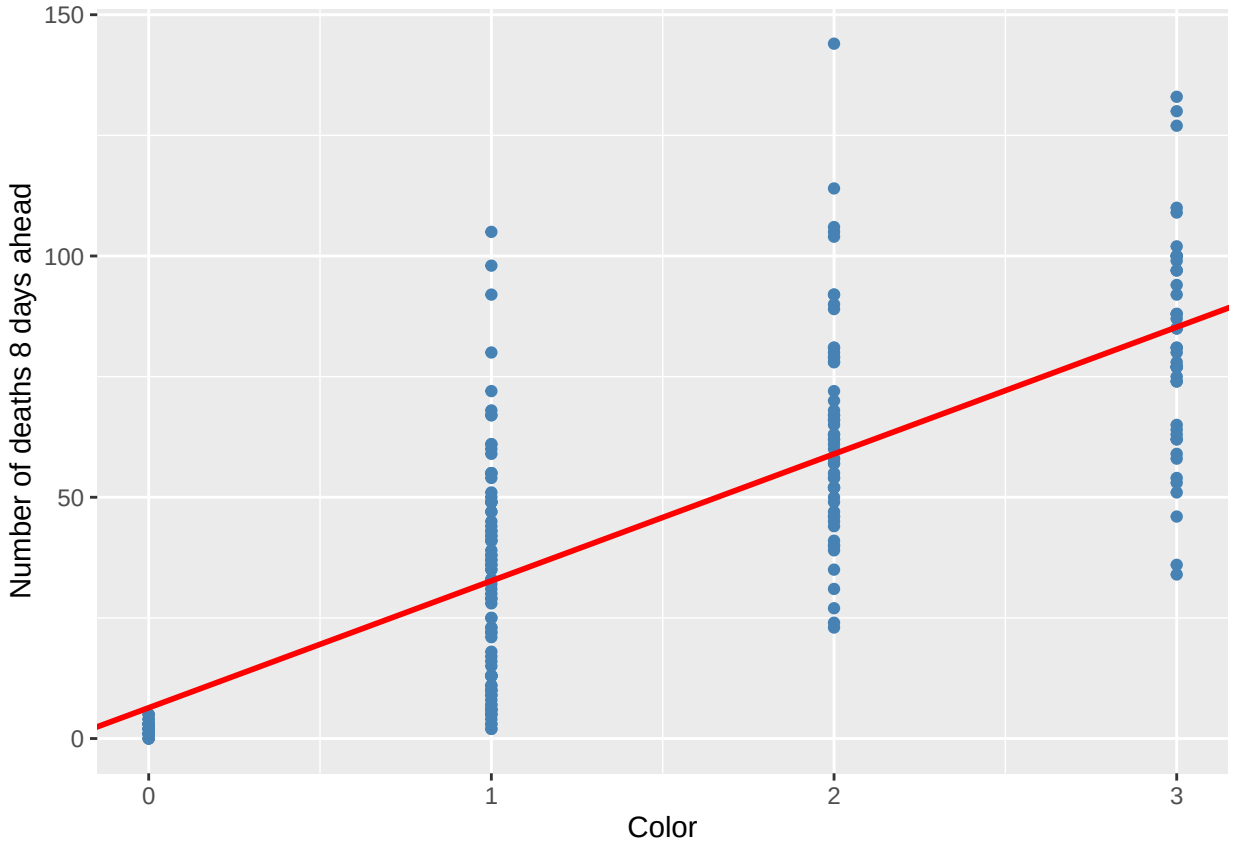
```
deathsH8.lm = lm(deathsH8 ~ hosp_av7D, data=dataset)
beta = coef(deathsH8.lm)
ggplot(data=dataset, aes(x= hosp_av7D, y = deathsH8))+
```

```
  geom_point(color = "steelblue")+
  geom_abline(intercept = beta[1], slope=beta[2], size =1, col="red")+
  xlab("Average number of hospitalizized cases in the previous 7 days")+
  ylab("Number of deaths 8 days ahead")
```



deathsH8 vs color

```
deathsH8.lm = lm(deathsH8 ~ color, data=dataset)
beta = coef(deathsH8.lm)
ggplot(data=dataset, aes(x= color, y = deathsH8))+
  geom_point(color = "steelblue")+
  geom_abline(intercept = beta[1], slope=beta[2], size =1, col="red")+
  xlab("Color")+
  ylab("Number of deaths 8 days ahead")
```



deathsH8 vs newpos_av7D, hosp_av7D, color

```
deathsH8.lm = lm(deathsH8 ~ newpos_av7D +hosp_av7D + color, data=dataset)
summary(deathsH8.lm)
```

```
##
## Call:
## lm(formula = deathsH8 ~ newpos_av7D + hosp_av7D + color, data = dataset)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -44.299  -9.480  -1.238   5.945  77.086
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) -5.451829   2.591076  -2.104   0.0366 *
## newpos_av7D  0.010206   0.001820   5.609 6.45e-08 ***
## hosp_av7D    0.004606   0.001143   4.030 7.83e-05 ***
## color        8.297857   1.953073   4.249 3.24e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 16.95 on 208 degrees of freedom
## Multiple R-squared:  0.7408, Adjusted R-squared:  0.737
## F-statistic: 198.1 on 3 and 208 DF,  p-value: < 2.2e-16
```