



# Modeling the Dynamics of COVID-19

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## Data Source

- ☒ Local  
☐ Our World In Data

## Continent

Europe

## Country

Luxembourg

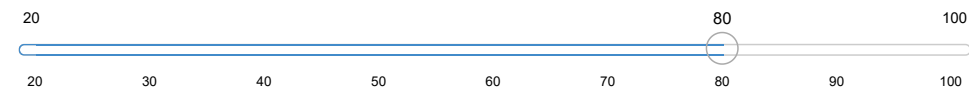
## Modeling Period

2020-04-04

to

2020-06-01

## Percentage of Training Dataset (Training vs. Testing Split):



## Variable of Interest

- ☒ New Cases  
☐ New Deaths

## Luxembourg

The study timeframe starts from **2020-04-04** until **2020-06-01** covering **59** days.

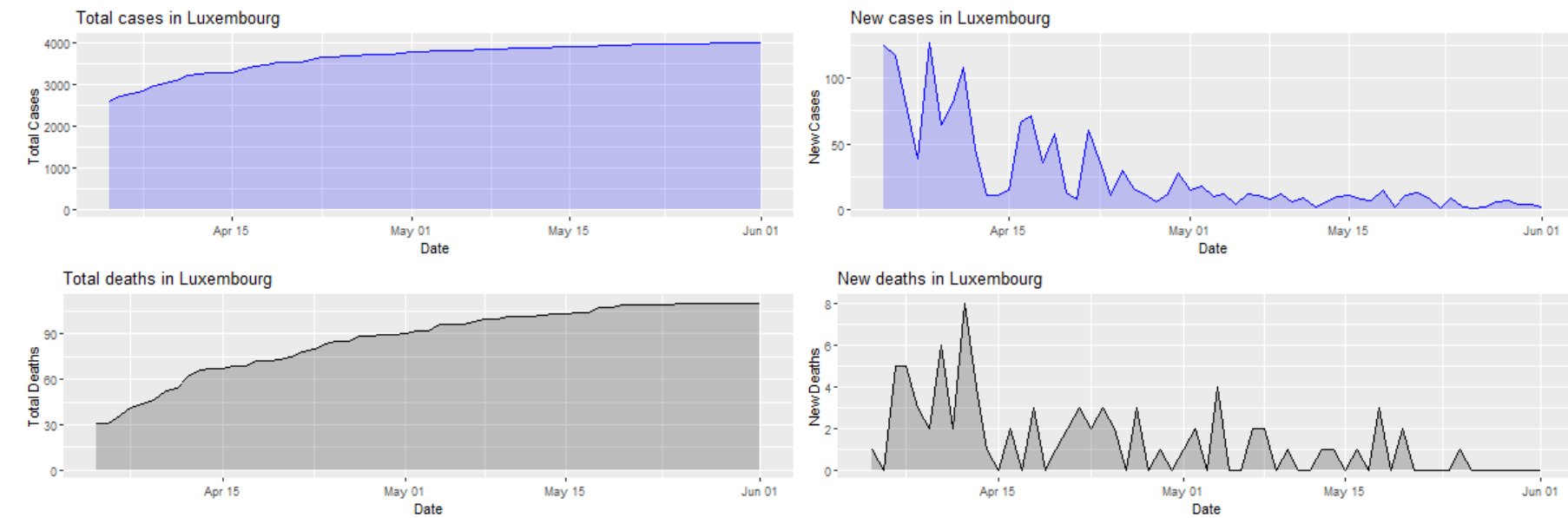
The first case was reported on: **2020-04-04**

The first death was reported on: **2020-04-04**

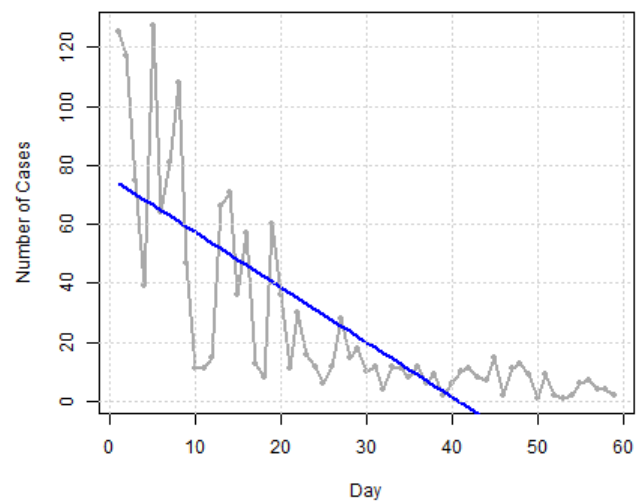
The total cumulative number of cases by the last day in the selected period is **4018** cases.

The total number of deaths by the last day in the selected period is **110** deaths.

## Cases vs. Deaths Overview

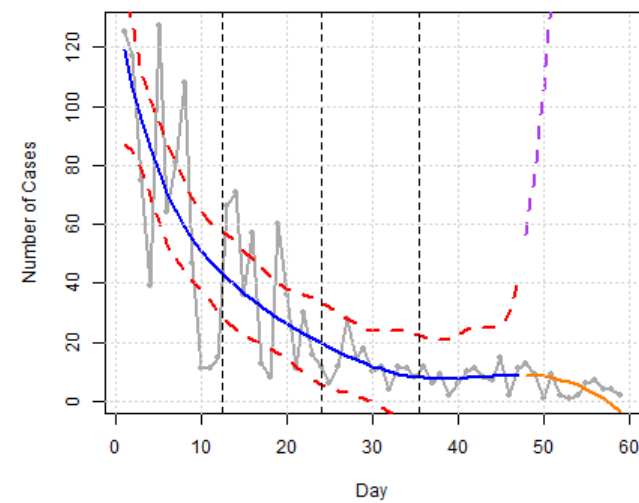


New Cases in Luxembourg (Actual vs. LR)



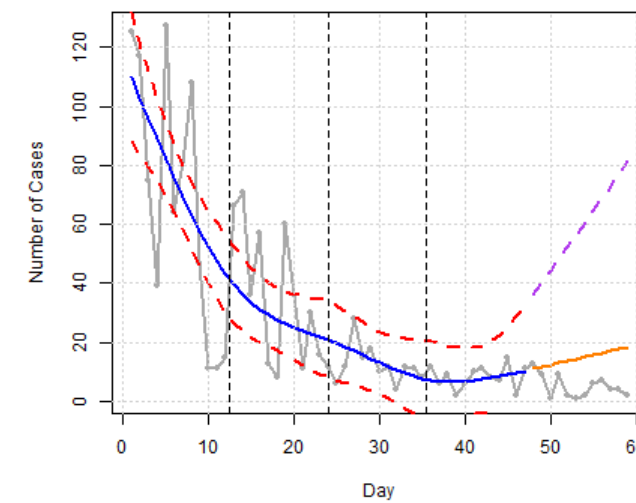
AIC = 434.855  
BIC = 440.405  
Training MSE = 537.37  
Testing MSE = 846.45

New Cases in Luxembourg (Actual vs. Cubic Spline)



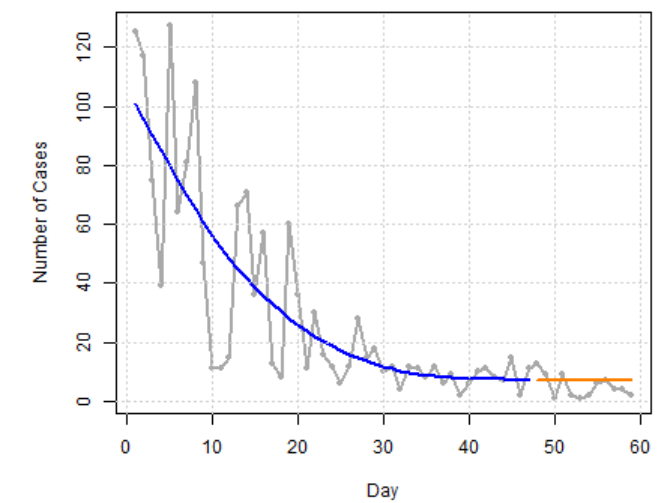
AIC = 425.503  
BIC = 440.304  
Training MSE = 356.01  
Testing MSE = 19.45

New Cases in Luxembourg (Actual vs. Natural Spline)



AIC = 422.276  
BIC = 433.377  
Training MSE = 361.91  
Testing MSE = 122.52

New Cases in Luxembourg (Actual vs. Smoothing Spline)



Degrees of Freedom = 3.953  
AIC = 34,749.28  
BIC = 34,756.59  
Training MSE = 369.59  
Testing MSE = 18.12