

# Modeling the Dynamics of COVID-19

Supervised by Dr. Sawsan Hilal  
Built by Aisha Khalid and Ahmed Khedr



## Data Source

- ☒ Local  
☐ Our World In Data

## Continent

Europe

## Country

Romania

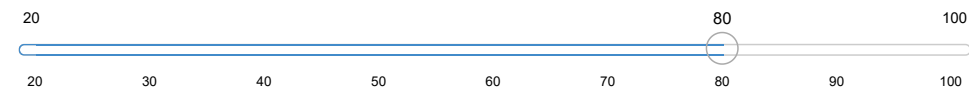
## Modeling Period

2020-04-04

to

2020-06-01

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



## Variable of Interest

- ☒ New Cases  
☐ New Deaths

## Romania

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

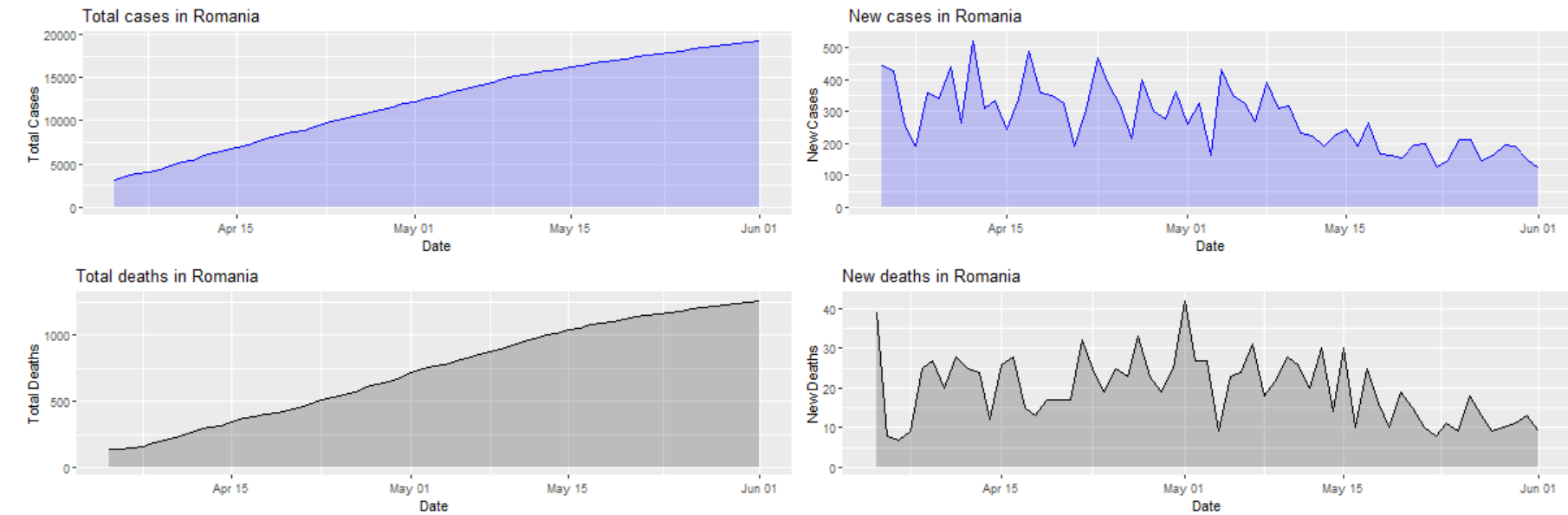
The first case was reported on: **2020-04-04**

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

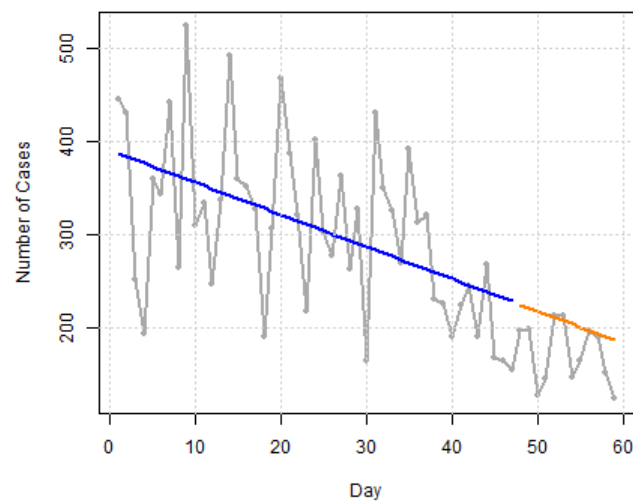
The total cumulative number of cases by the last day in the selected period is **19257** cases.

The total number of deaths by the last day in the selected period is **1262** deaths.

## Cases vs. Deaths Overview

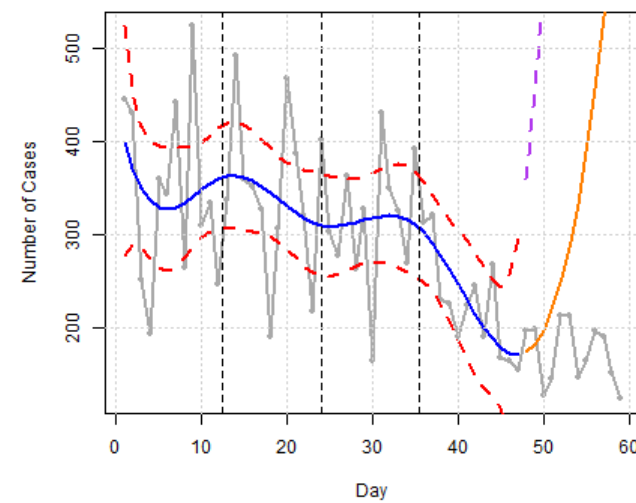


New Cases in Romania (Actual vs. LR)



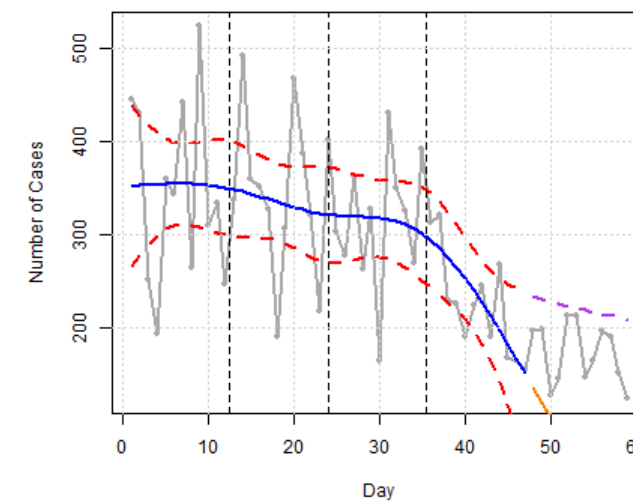
AIC = 550.077  
BIC = 555.628  
Training MSE = 6,236.9  
Testing MSE = 2,059.77

New Cases in Romania (Actual vs. Cubic Spline)



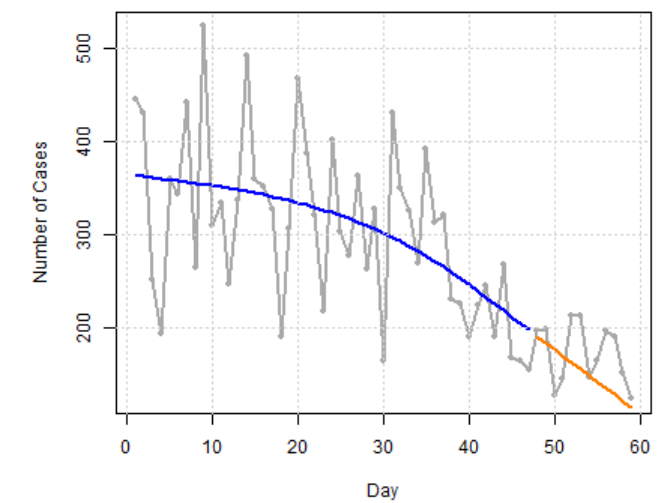
AIC = 553.063  
BIC = 567.864  
Training MSE = 5,372.17  
Testing MSE = 72,687.55

New Cases in Romania (Actual vs. Natural Spline)



AIC = 550.73  
BIC = 561.831  
Training MSE = 5,566.21  
Testing MSE = 18,220.15

New Cases in Romania (Actual vs. Smoothing Spline)



Degrees of Freedom = 2.903  
AIC = 543,126.5  
BIC = 543,131.9  
Training MSE = 5,777.87  
Testing MSE = 1,526.81