COVID-19 Linear Regression for daily new cases per country
Italy

Linear Regression of Peak Periods: Italy

Regression equation in excel date code:
\[ y = -109.03x + 4,794,162.90 \]

Daily declining rate= 109 cases per day
When \( y = 0 \), \( x = \text{May 20, 2020} \)

Average wave Period: 8 Days
Average declining rate of recorded results= 105 cases per day

Recorded results
Projected results
Linear regression line
Spain

Linear Regression of Peak Periods: Spain

Regression equation in excel date code:
\[ y = -105.79x + 4,654,337.50 \]

Daily declining rate = 106 cases per day

When \( y = 0 \), \( x = \) June 14, 2020

Average declining rate of recorded results = 131 cases per day

Average wave period: 7 days

Recorded results
Projected results
Linear regression line
Linear Regression of Peak Periods: Germany

Regression equation in excel date code:

\[ y = -159.29x + 7,002,729.67 \]

When \( y = 0 \), \( x = May 11, 2020 \)

Average wave period: 7 days

Daily declining rate= 159 cases per day

Average declining rate of recorded results= 137 cases per day
France

Estimated Daily New Cases: France

Learning curve function 1: \( E = 13850x^{-1.448} \)

Log equation from recorded results: \( E = -4242\ln(x) + 16491 \)

When \( y = 0 \), \( x = 49 \) (May 21, 2020) according to log equation

Learning curve function 2: \( E = 31000x \)

Linear line for recorded values
Logarithmic line for recorded values
Estimated values using \( E \) equation 1
Estimated values using \( E \) equation 2
Power (Estimated values using \( E \) equation 1)
Linear (Linear line for recorded values)

Date

April 2, 2020
April 12, 2020
April 22, 2020
May 2, 2020
May 12, 2020
May 22, 2020
June 2, 2020
June 12, 2020
June 22, 2020
July 2, 2020
July 12, 2020
July 22, 2020
July 1, 2020

Daily New Cases, E
Regression Line for Peak Periods: Switzerland

Regression equation in excel date code:

\[ y = -30.20x + 1,327,596.63 \]

Daily declining rate = 30 cases per day

When \( y = 0 \), \( x = \) May 9, 2020

Average declining rate of recorded results = 27 cases per day

Average wave period: 7 days

Switzerland
Regression Line of Peak Periods: Cyprus

Regression equation in excel date code:

\[ y = -1.4133x + 62127 \]

Projected Results

When \( y = 0 \), \( x \approx \text{May 8, 2020} \)

Daily Declining rate = 1 case per day

Average wave period: 6 days

Average declining rate of recorded results = 1 case per day

- 8 Days
- 5 Days
- 7 Days
- 7 Days
- 5 Days
- 4 Days

Cyprus