Situation vs Model COVID-19 in Germany

Week number (2020) 9 35 15 29 Confirmed cases Recovered cases Deaths Modeled cases

6e+05

4e+05

2e+05

0e+00

0

Confirmed cases

Days after 3/1/20

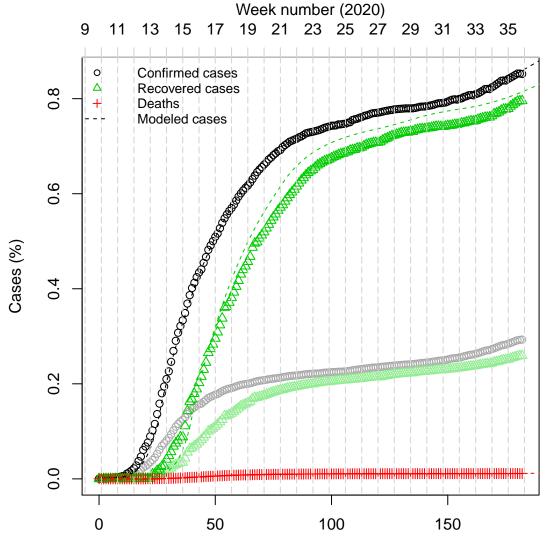
100

150

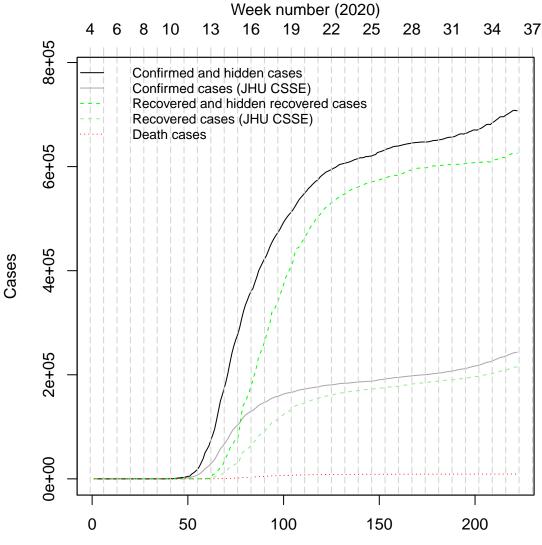
50

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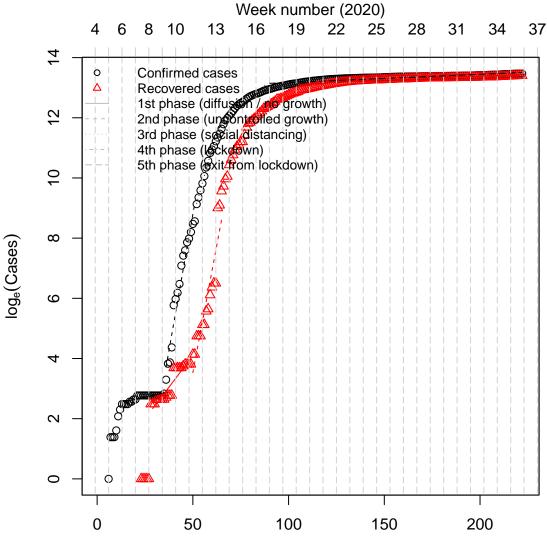
Situation vs Model COVID-19 in Germany



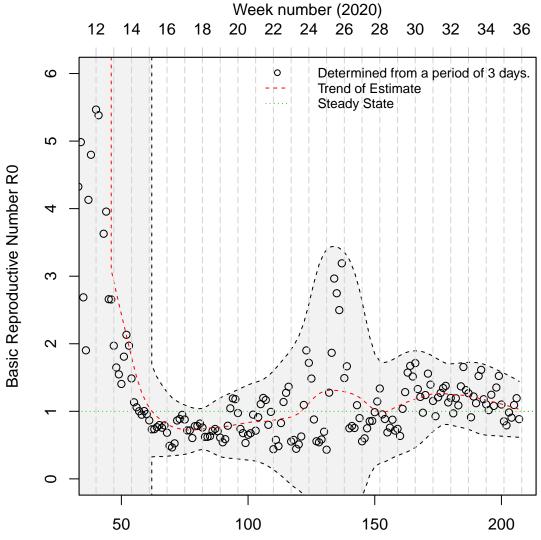
Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de



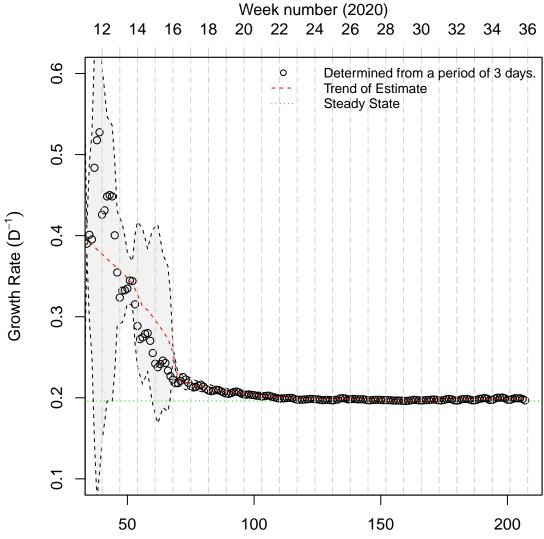
Days after 1/22/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de



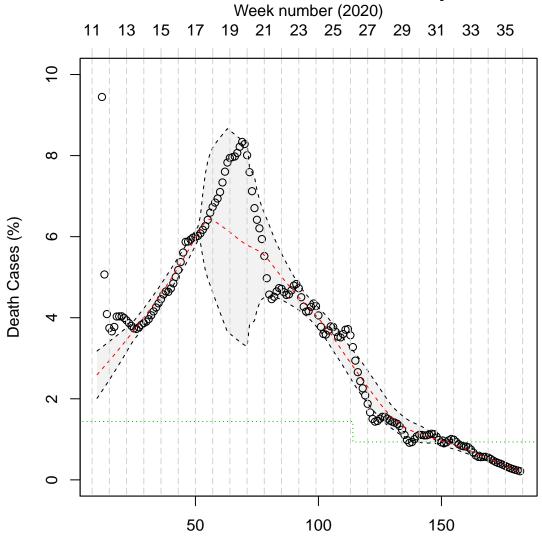
Days after 1/22/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de



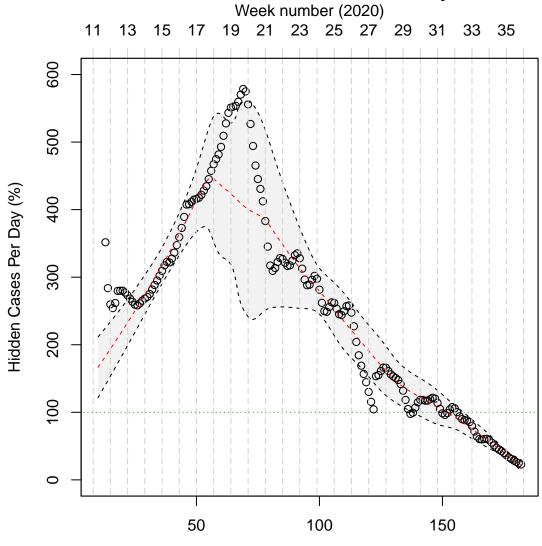
Days after 2/5/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de



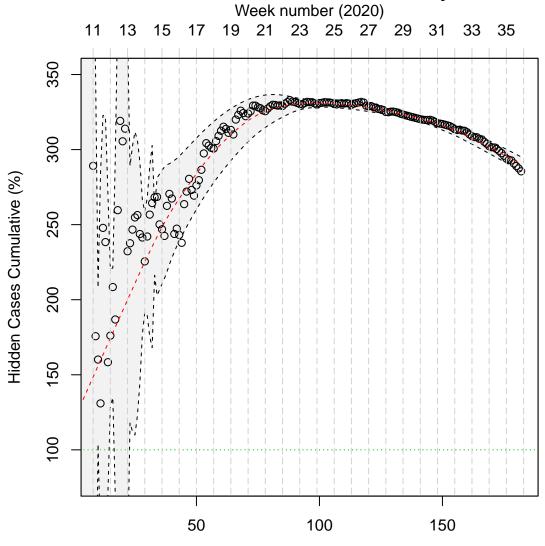
Days after 2/5/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de



Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

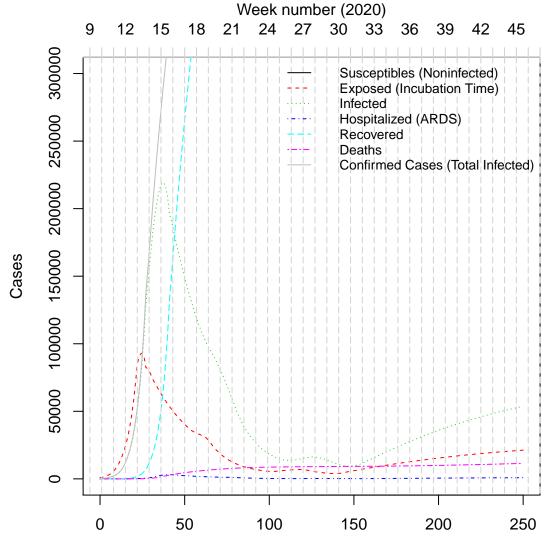


Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de



Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

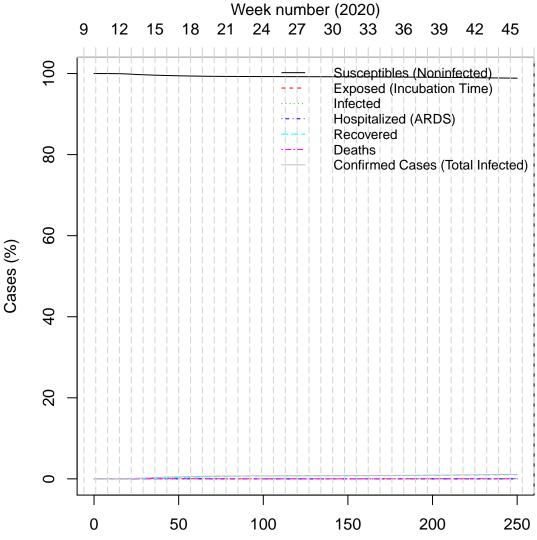
Forecast COVID-19 in Germany



Days after 3/1/20

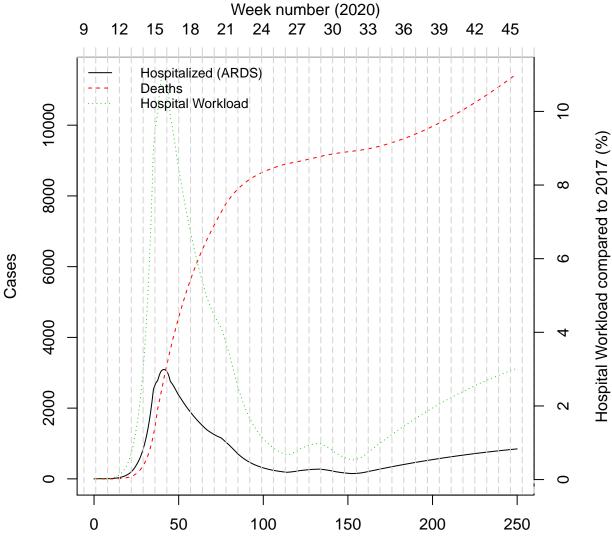
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Forecast COVID-19 in Germany



Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Forecast COVID-19 in Germany



Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Forecast COVID-19 in Germany Week number (2020) 45 15 18 36 39 42 Hospitalized (ARDS) Deaths Hospital Workload ∞ 9

12

0.014

0.012

0.010

0.008

900.0

0.004

0.002

0.000

0

Cases (%)

Hospital Workload compared to 2017 (%) 0 250 50 100 150 200 Days after 3/1/20

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Scenario 1 no social distancing and no lockdown Week number (2020) 24 45 12 15 18 21 36 39 8e+07 Susceptibles (Noninfected) Exposed (Incubation Time) Infected Hospitalized (ARDS) Recovered Deaths Confirmed Cases (Total Infected) 6e+07 Cases 4e+07 2e+07 00+00

Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

100

0

Scenario 1 no social distancing / no lockdown Week number (2020) Susceptibles (Noninfected) Exposed (Incubation Time) Infected Hospitalized (ARDS) Recovered Deaths Confirmed Cases (Total Infected) Cases (%)

Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 1 no social distancing and no lockdown Week number (2020) Hospitalized (ARDS) Deaths Hospital Workload Hospital Workload compared to 2017 (%)

Cases

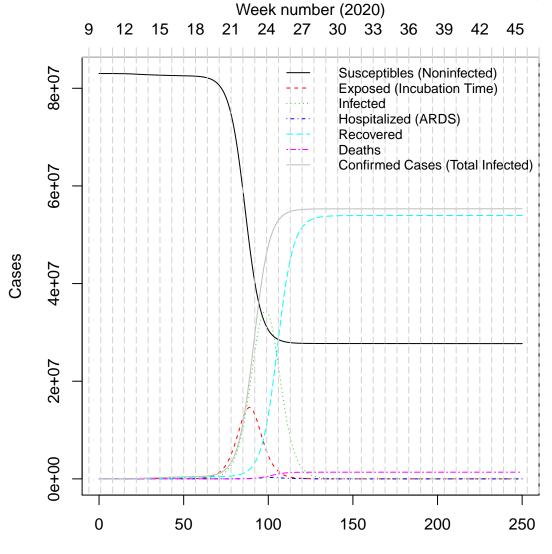
Days after 3/1/20

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Scenario 1 no social distancing and no lockdown Week number (2020) 24 45 12 15 18 36 1000 Hospitalized (ARDS) Deaths Hospital Workload 1.5 Hospital Workload compared to 2017 (%) Cases (%) 0.0 0 50 100 150 200 250

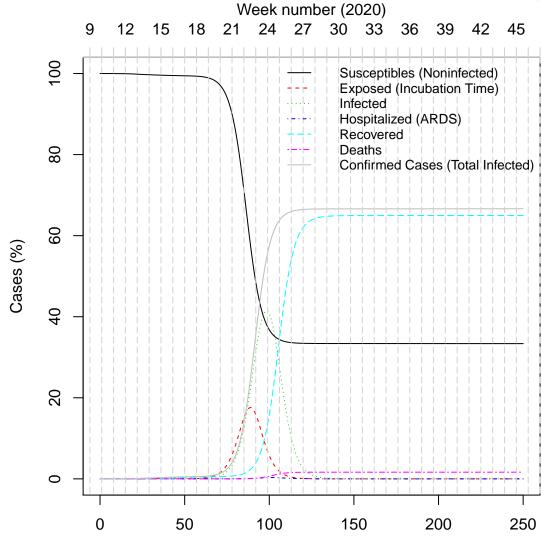
Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



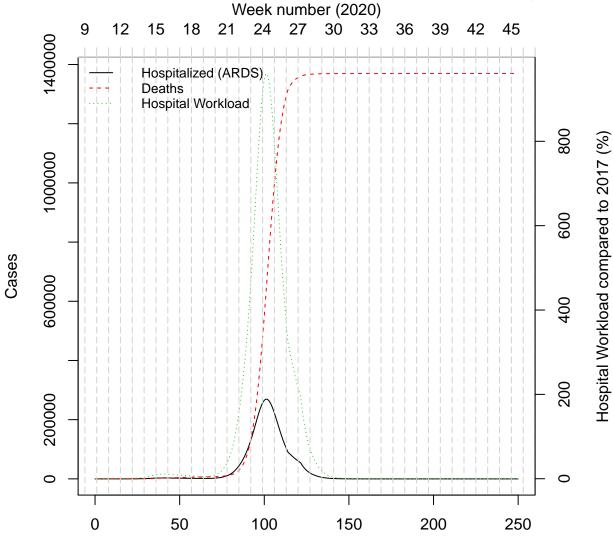
Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing Week number (2020) 9 45 12 15 18 36 39 Hospitalized (ARDS) Deaths 1.5 Hospital Workload Hospital Workload compared to 2017 (%) 0.5

Cases (%)

0.0

0

50

Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

Scenario 3 exit after day 50 with social distancing Week number (2020) 9 24 45 12 15 18 36 39 42 8e+07 Susceptibles (Noninfected) Exposed (Incubation Time) Infected Hospitalized (ARDS) Recovered Deaths Confirmed Cases (Total Infected) 6e+07 Cases 4e+07 2e+07 00+00

Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

100

0

Scenario 3 exit after day 50 with social distancing Week number (2020) Susceptibles (Noninfected) Exposed (Incubation Time) Infected Hospitalized (ARDS) Recovered Deaths Confirmed Cases (Total Infected) Cases (%)

Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 3 exit after day 50 with social distancing Week number (2020) 45 12 15 18 36 Hospitalized (ARDS) Deaths 1e+06 Hospital Workload Hospital Workload compared to 2017 (%) 8e+05 6e+05 Cases 4e+05 2e+05 0e+00

Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

150

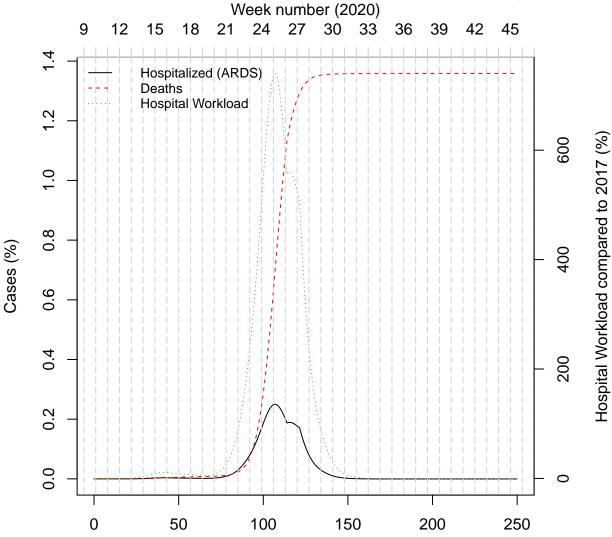
200

250

100

0

Scenario 3 exit after day 50 with social distancing



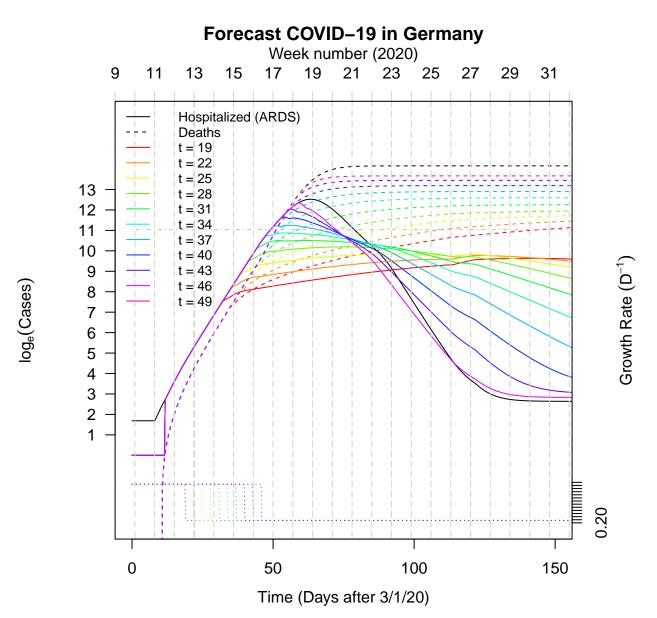
Days after 3/1/20 Created by Sören Thiering (09/01/2020). Email: soeren.thiering@hs-anhalt.de

Forecast COVID-19 in Germany Week number (2020) 9 11 13 15 17 19 25 27 29 31 1400000 Hospitalized (ARDS) Deaths R0 = 0.4R0 = 0.61200000 R0 = 0.8R0 = 1R0 = 1.21000000 R0 = 1.4R0 = 1.6R0 = 1.8800000 Growth Rate (D^{-1}) R0 = 2R0 = 2.2Cases R0 = 2.4600000 400000 200000 0 0.32 0 50 100 150 Time (Days after 3/1/20)

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Forecast COVID-19 in Germany Week number (2020) 9 19 31 11 13 15 17 25 27 29 1400000 Hospitalized (ARDS) Deaths t = 19 t = 22 1200000 t = 25t = 28t = 31 1000000 t = 34t = 37t = 40800000 Growth Rate (D⁻¹) t = 43t = 46Cases t = 49600000 400000 200000 0 0.20 150 0 50 100 Time (Days after 3/1/20)

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