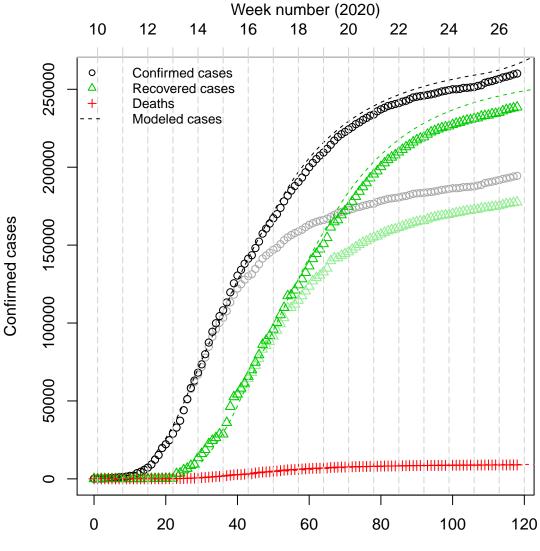


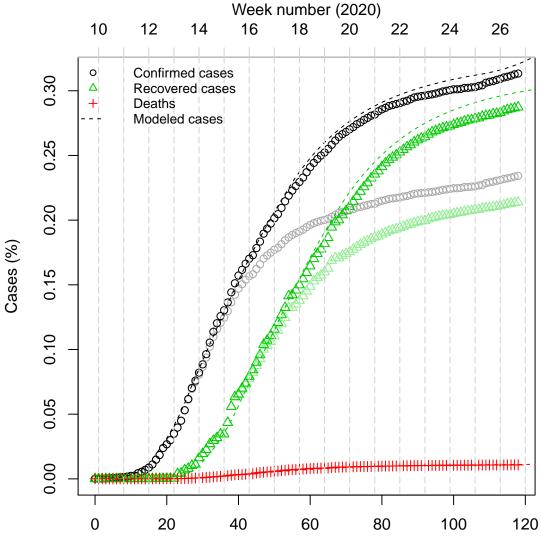
Situation vs Model COVID-19 in Germany



Days after 3/1/20

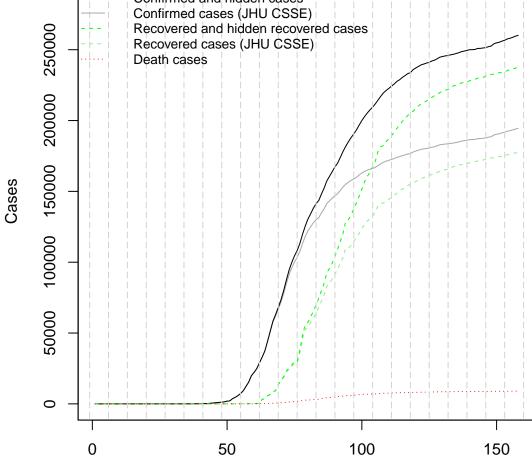
Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Situation vs Model COVID-19 in Germany



Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Situation COVID-19 in Germany Week number (2020) 20 22 26 8 10 24 Confirmed and hidden cases



6

Days after 1/22/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

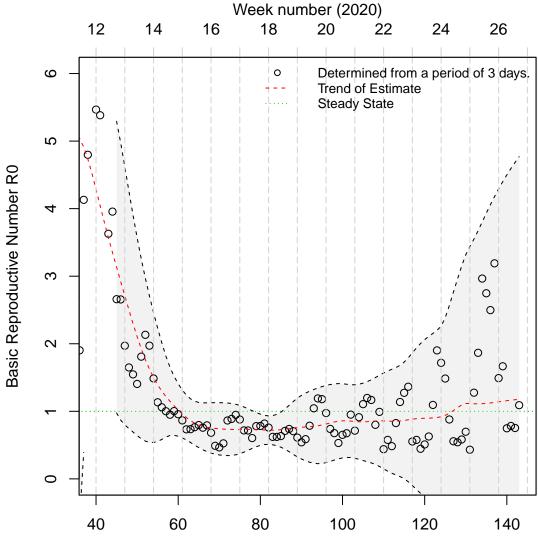
Situation COVID-19 in Germany Week number (2020) 6 10 20 22 24 26 Confirmed cases 12 Recovered cases 1st phase (diffusion / no gowth) 2nd phase (uncontrolled rown) 3rd phase (social distancing) 4th phase (lockdown) 19 5th phase (exit from locks own) ω 9 α

Days after 1/22/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

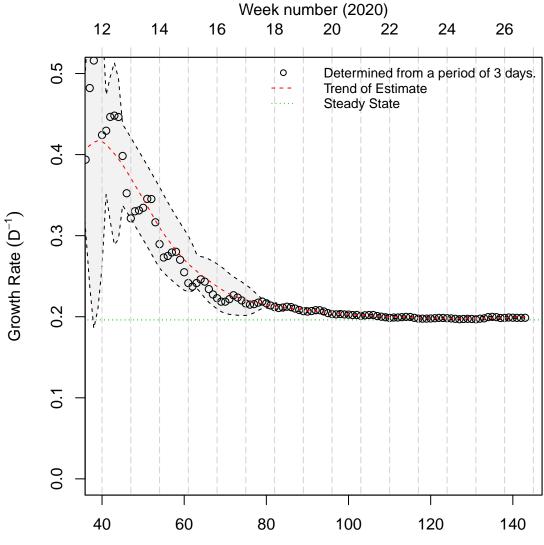
100

150

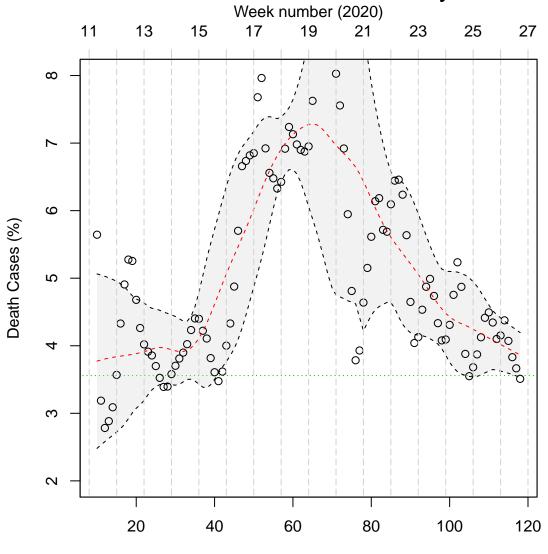
50



Days after 2/5/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

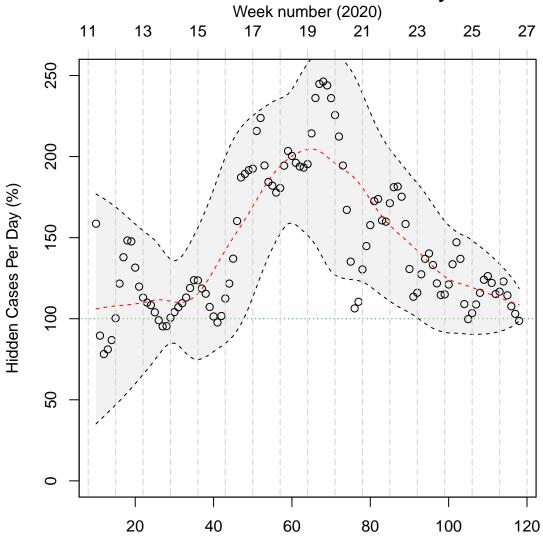


Days after 2/5/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de



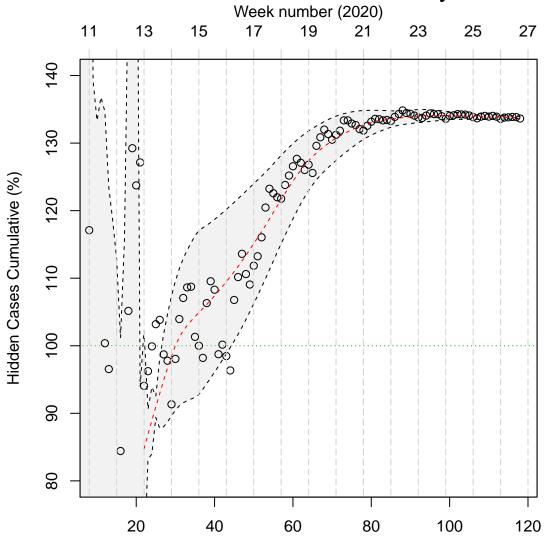
Days after 3/1/20

Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de



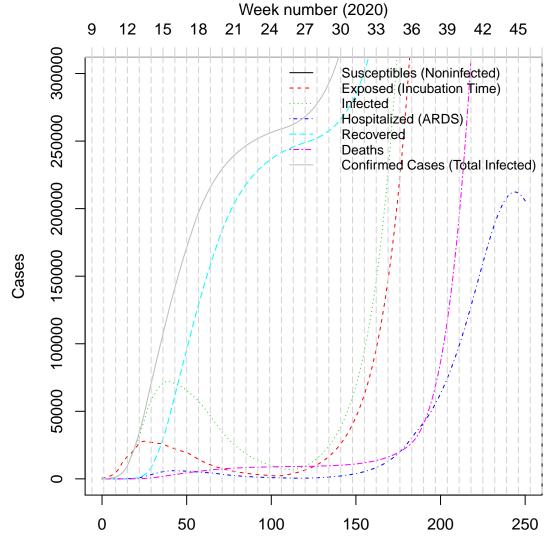
Days after 3/1/20

Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de



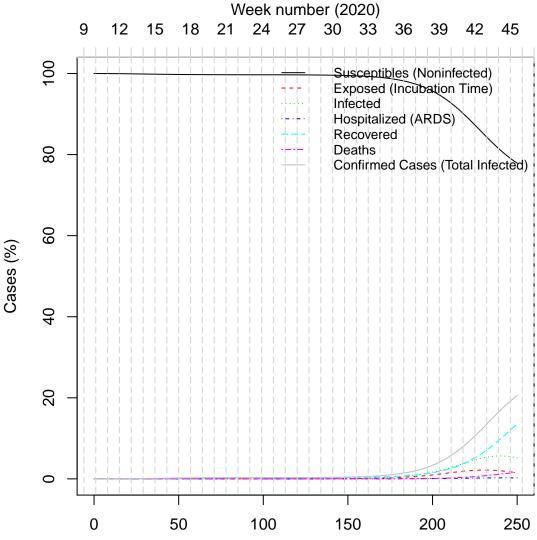
Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Forecast COVID-19 in Germany



Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

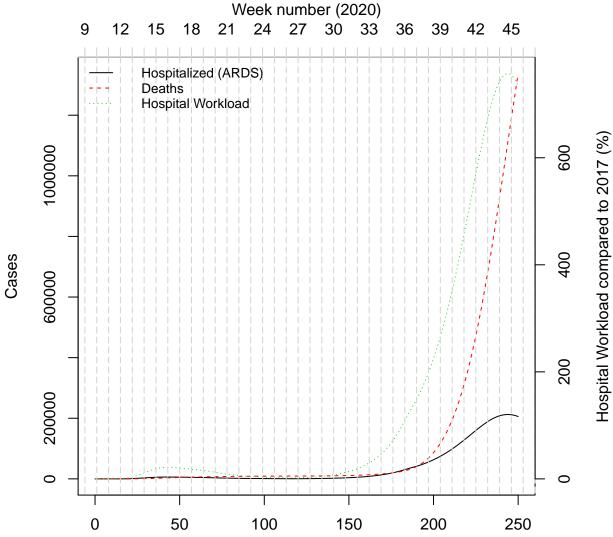
Forecast COVID-19 in Germany



Days after 3/1/20

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Forecast COVID-19 in Germany



Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Forecast COVID-19 in Germany Week number (2020) 45 12 15 18 36 39 42 Hospitalized (ARDS) Deaths 1.5 Hospital Workload Hospital Workload compared to 2017 (%) Cases (%) 0.5 0.0

Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

150

200

100

0

50

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 (06/28/2020). 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 (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 1 no social distancing and no lockdown Week number (2020) 45 12 15 18 36 0009 Hospitalized (ARDS) Deaths Hospital Workload 5000 Hospital Workload compared to 2017 (%) 4000 3000 2000

90+99

5e+06

4e+06

3e+06

2e+06

1e+06

0e+00

0

50

Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

150

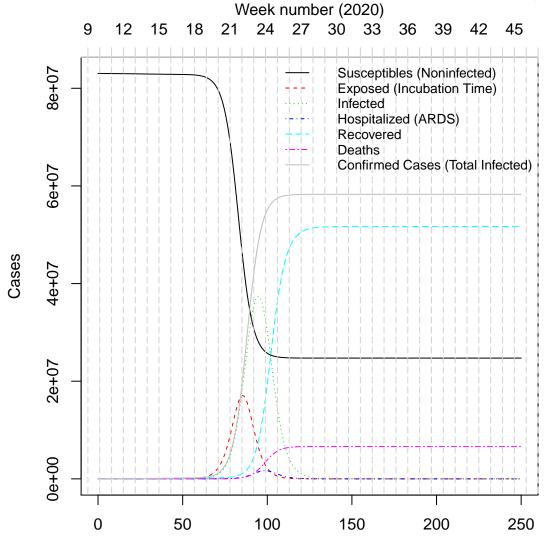
200

250

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

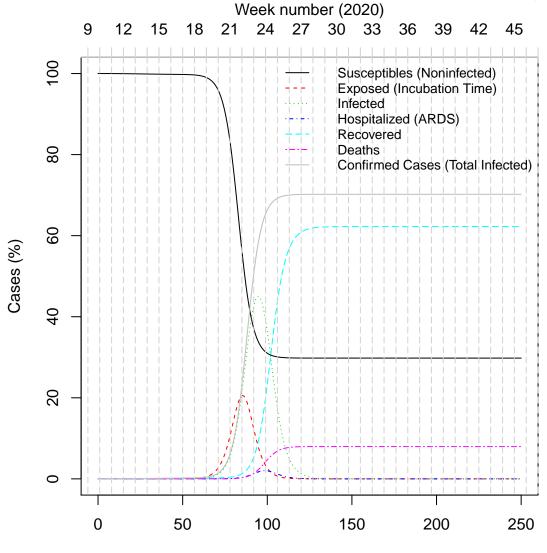
Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



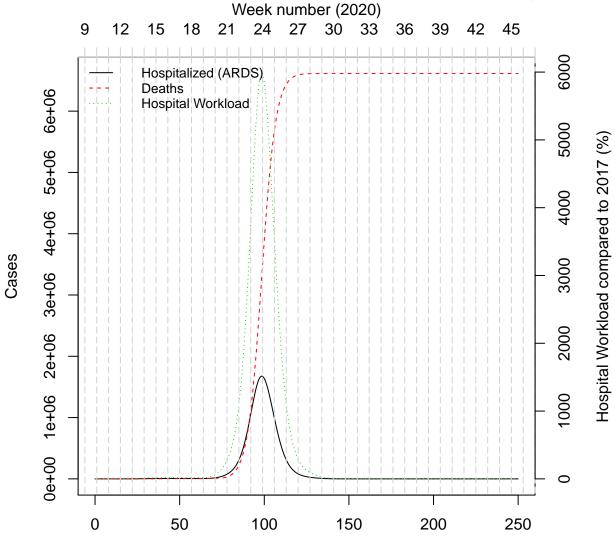
Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing Week number (2020) 12 15 18 36 45 0009 Hospitalized (ARDS) Deaths Hospital Workload Hospital Workload compared to 2017 (%)

 ∞

9

 α

0

Cases (%)

Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

100

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 (06/28/2020). 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 (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 3 exit after day 50 with social distancing Week number (2020) Hospitalized (ARDS) Deaths Hospital Workload Hospital Workload compared to 2017 (%) Cases

Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 3 exit after day 50 with social distancing Week number (2020) 45 12 15 18 36 39 Hospitalized (ARDS) 800 Deaths Hospital Workload 2.5 Hospital Workload compared to 2017 (%) 2.0 Cases (%) 1.5 0.5 0.0

Days after 3/1/20 Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

100

0

Forecast COVID-19 in Germany Week number (2020) 9 11 13 15 17 25 27 29 31 Hospitalized (ARDS) 6500000 Deaths 6000000 R0 = 0.4R0 = 0.65500000 R0 = 0.8R0 = 15000000 R0 = 1.24500000 R0 = 1.4R0 = 1.64000000 R0 = 1.8Growth Rate (D^{-1}) R0 = 23500000 R0 = 2.23000000 R0 = 2.42500000 2000000 1500000 1000000 500000 0 0.32 0 50 100 150

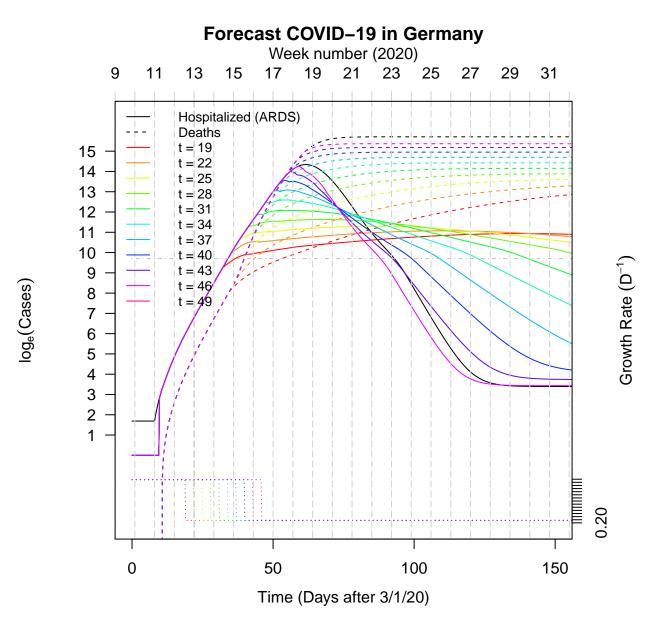
Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Time (Days after 3/1/20)

Forecast COVID-19 in Germany Week number (2020) 9 11 13 15 17 25 27 29 31 Hospitalized (ARDS) 6500000 Deaths 6000000 t = 19t = 225500000 t = 25t = 285000000 t = 314500000 t = 34t = 374000000 t = 40Growth Rate (D^{-1}) t = 433500000 t = 463000000 t = 492500000 2000000 1500000 1000000 500000 0 0.20 0 50 100 150

Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de

Time (Days after 3/1/20)



Created by Sören Thiering (06/28/2020). Email: soeren.thiering@hs-anhalt.de