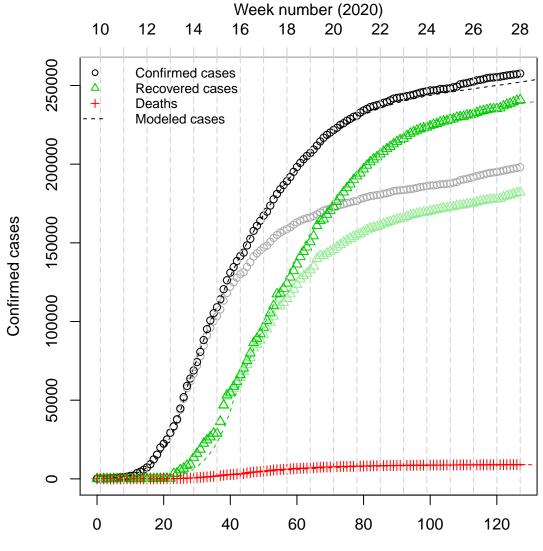
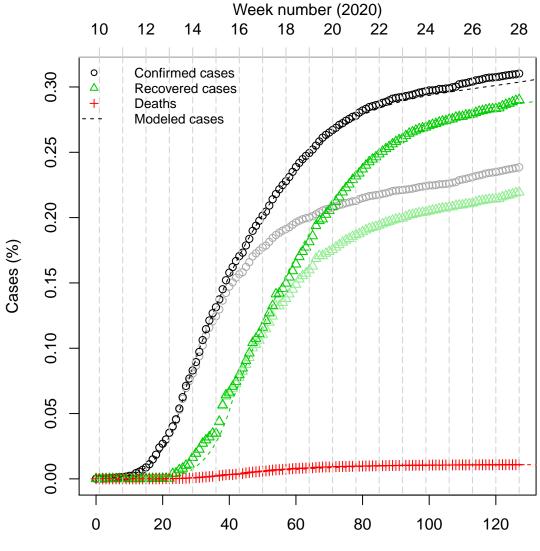
Situation vs Model COVID-19 in Germany

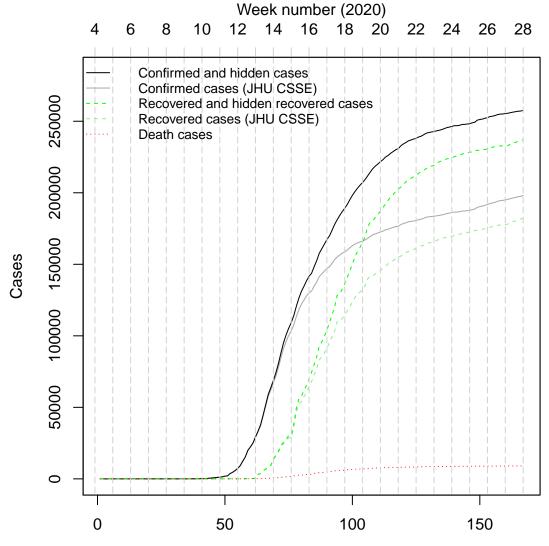


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Situation vs Model COVID-19 in Germany



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Days after 1/22/20

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Situation COVID-19 in Germany Week number (2020) 16 10 22 24 26 28 Confirmed cases 0 12 Recovered cases 1st phase (diffusion / now owth 2nd phase (uncontrolled growth) 3rd phase (social disancing) 4th phase (lockdown) 10 4th phase (lockdown) 5th phase (exit from lockdown) ∞ 9

log_e(Cases)

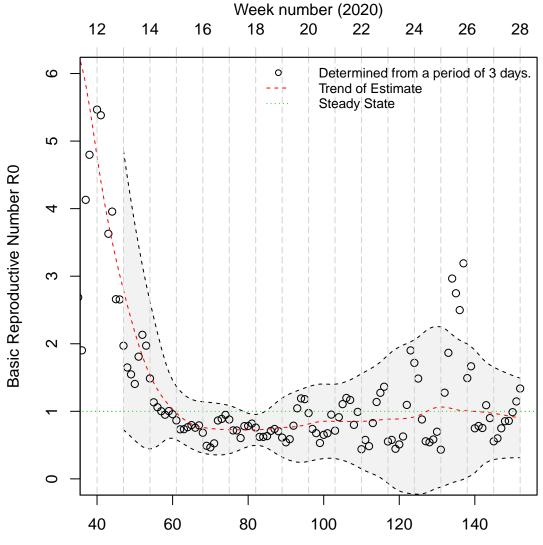
 α

0

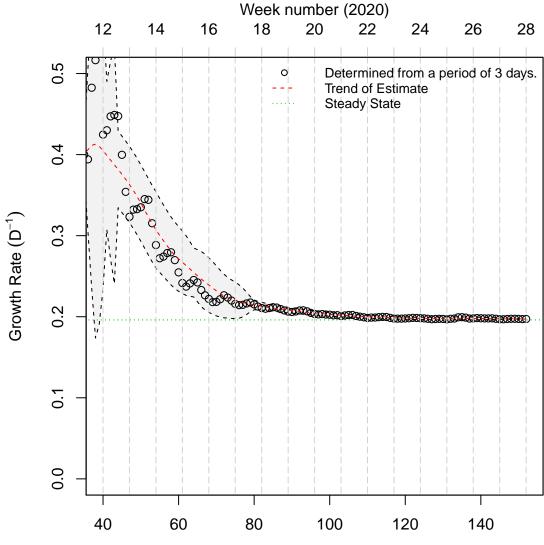
Days after 1/22/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

100

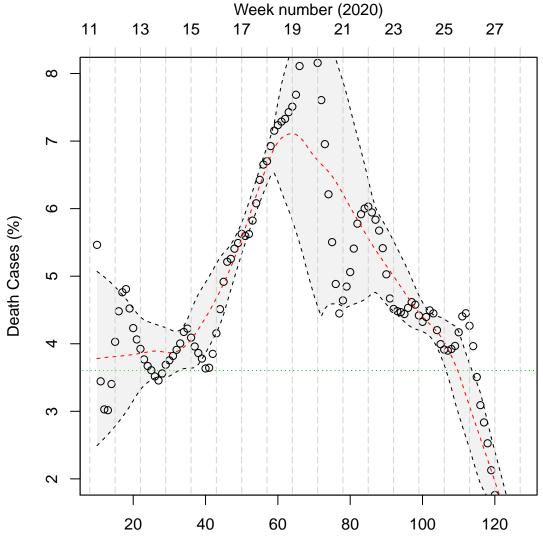
150



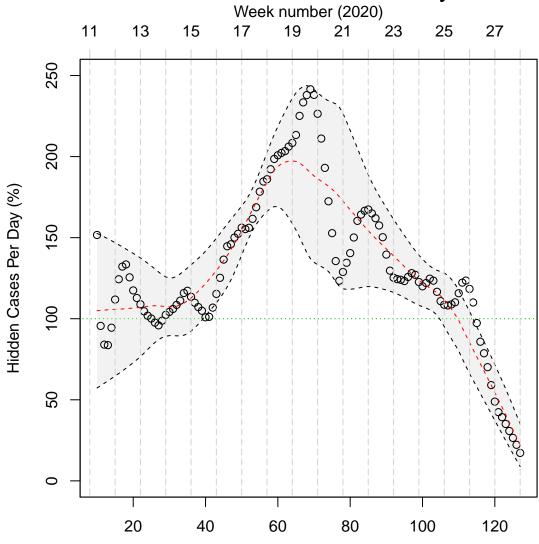
Days after 2/5/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de



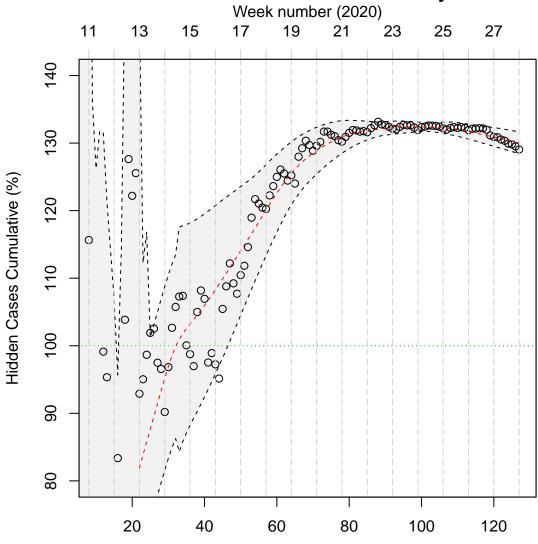
Days after 2/5/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de



Days after 3/1/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

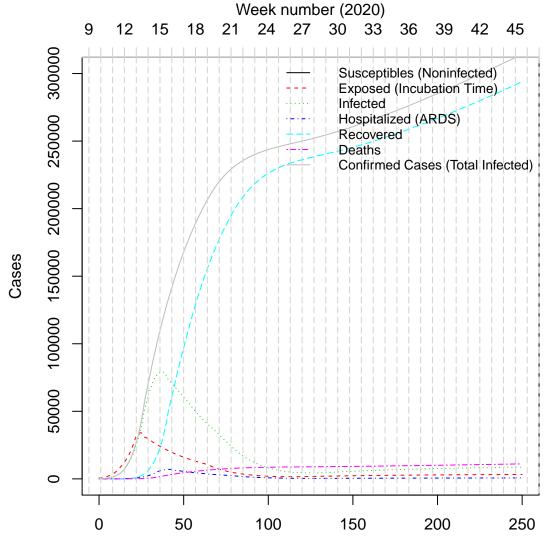


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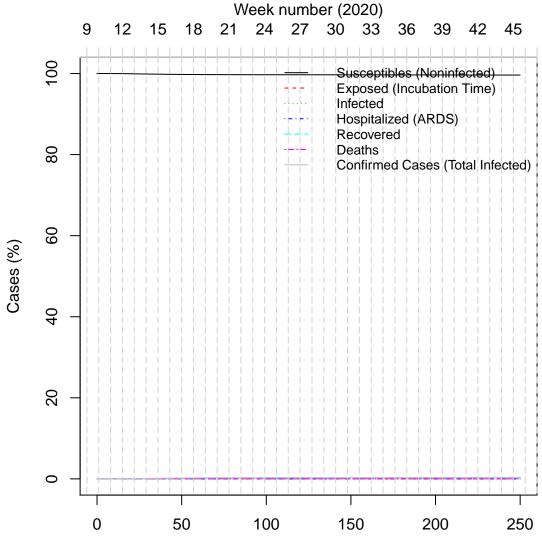
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Forecast COVID-19 in Germany



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Forecast COVID-19 in Germany



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Forecast COVID-19 in Germany Week number (2020) Hospitalized (ARDS) Deaths Hospital Workload Hospital Workload compared to 2017 (%) Cases

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Forecast COVID-19 in Germany Week number (2020) 45 15 18 36 39 42 25 Hospitalized (ARDS) Deaths Hospital Workload Hospital Workload compared to 2017 (%) 15

12

0.012

0.010

Cases (%)

0.008 900.0 0.004 2 0.002 0.000 100 250 0 50 150 200 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 (07/07/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

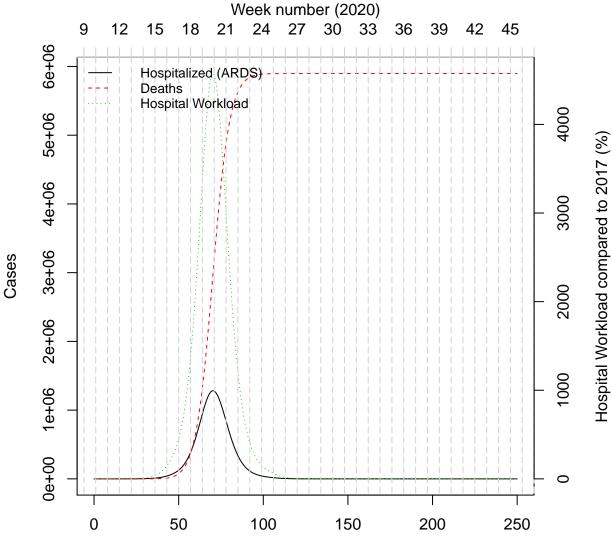
100

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 (07/07/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 1 no social distancing and no lockdown

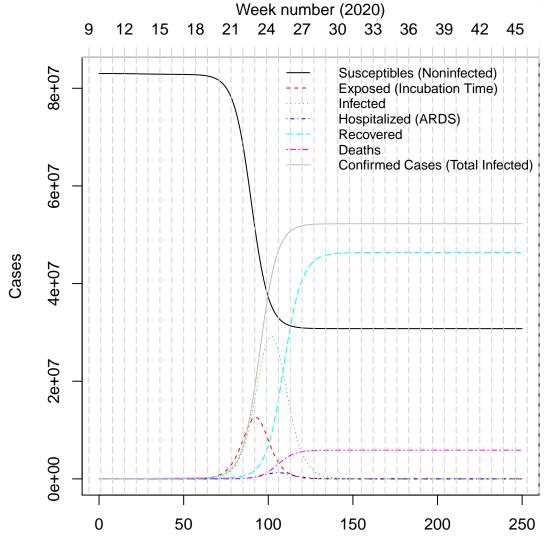


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Scenario 1 no social distancing and no lockdown Week number (2020) Hospitalized (ARDS) Deaths Hospital Workload Hospital Workload compared to 2017 (%) Cases (%) က

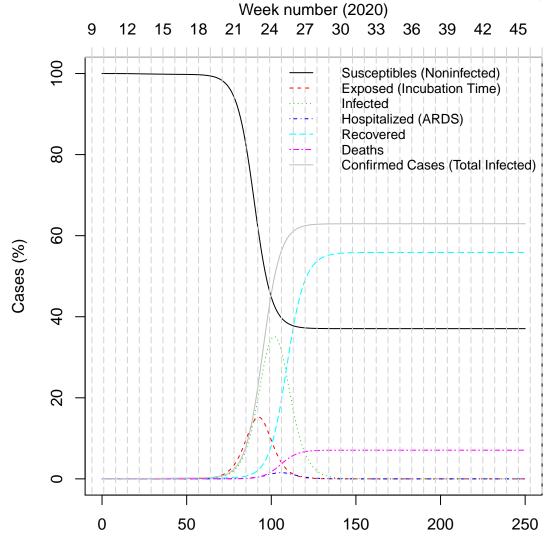
Days after 3/1/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



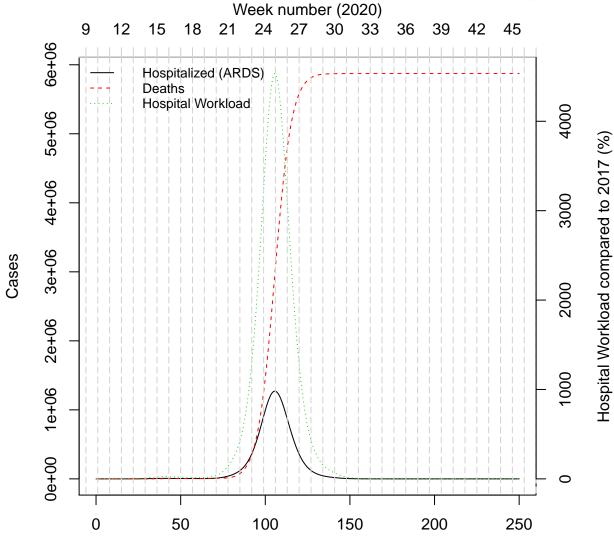
Days after 3/1/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



Days after 3/1/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing



Days after 3/1/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

Scenario 2 exit after day 50 without social distancing Week number (2020) 12 15 18 36 45 Hospitalized (ARDS) Deaths Hospital Workload 4000 9 Hospital Workload compared to 2017 (%) 2 ന α

Cases (%)

Days after 3/1/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

200

250

150

50

0

Scenario 3 exit after day 50 with social distancing Week number (2020) 9 12 24 45 15 18 21 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 (07/07/2020). 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 (07/07/2020). 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) 2500 Deaths Hospital Workload Hospital Workload compared to 2017 (%) 1500 500

4e+06

3e+06

2e+06

1e+06

00+00

0

50

Cases

Days after 3/1/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

150

200

100

Scenario 3 exit after day 50 with social distancing Week number (2020) 12 15 18 36 45 Hospitalized (ARDS) 2500 Deaths Hospital Workload 2 Hospital Workload compared to 2017 (%) 1500 Cases (%) က α 500

Days after 3/1/20 Created by Sören Thiering (07/07/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

100

50

Forecast COVID-19 in Germany Week number (2020) 9 11 13 15 17 25 27 29 31 6000000 Hospitalized (ARDS) Deaths 5500000 R0 = 0.4R0 = 0.65000000 R0 = 0.8R0 = 14500000 R0 = 1.24000000 R0 = 1.4R0 = 1.63500000 R0 = 1.8Growth Rate (D^{-1}) R0 = 23000000 R0 = 2.2R0 = 2.42500000 2000000 1500000 1000000 500000 0 0.32 0 50 100 150

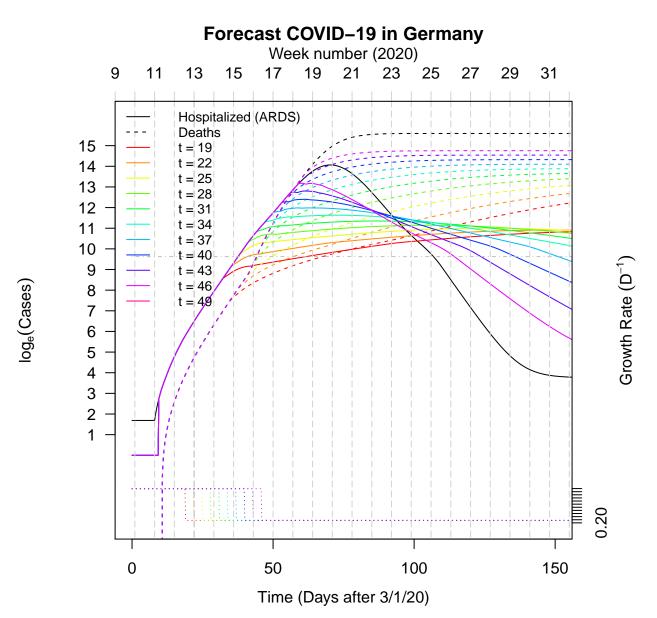
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Time (Days after 3/1/20)

Forecast COVID-19 in Germany Week number (2020) 9 31 11 13 15 17 19 25 27 29 6000000 Hospitalized (ARDS) Deaths 5500000 t = 19t = 225000000 t = 25t = 284500000 t = 31 4000000 t = 34t = 37 3500000 t = 40Growth Rate (D⁻¹) t = 433000000 t = 46t = 492500000 2000000 1500000 1000000 500000 0 0.20 150 0 50 100

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Time (Days after 3/1/20)



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