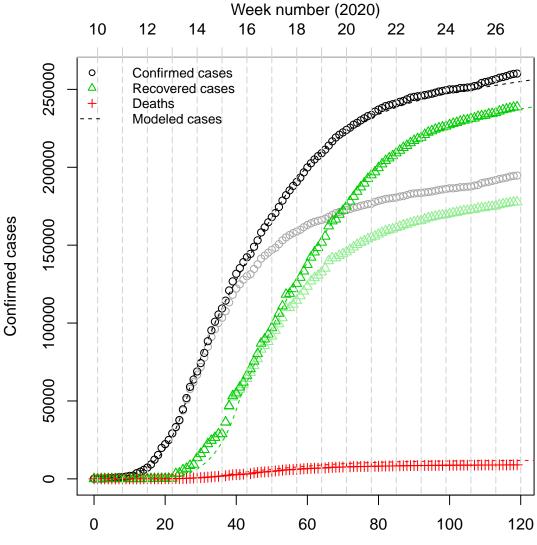
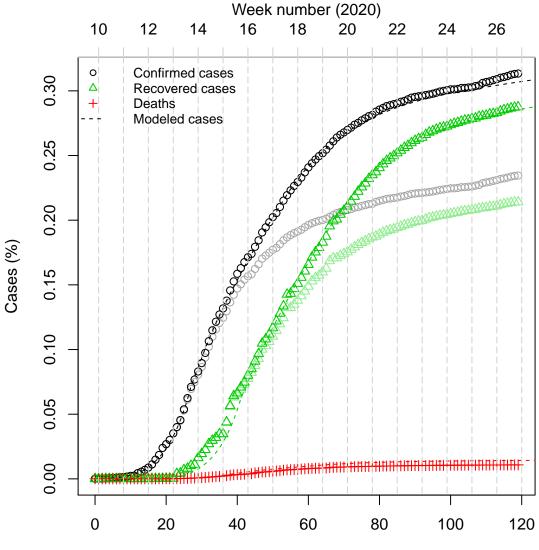


#### Situation vs Model COVID-19 in Germany

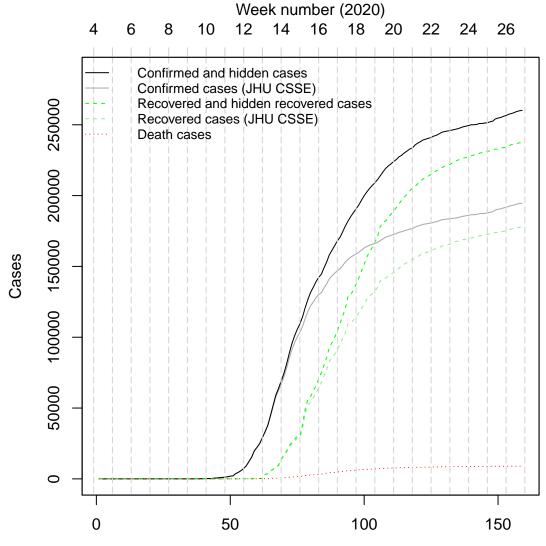


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#### Situation vs Model COVID-19 in Germany



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Days after 1/22/20

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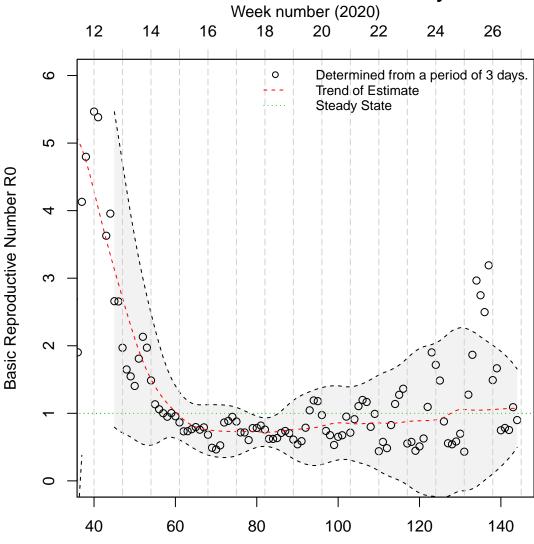
# Situation COVID-19 in Germany Week number (2020) 26 6 10 20 22 24 Confirmed cases 12 Recovered cases 1st phase (diffusion / no gowth) 2nd phase (uncontrolled growth) 3rd phase (social distancing) 19 4th phase (lockdown) 4th phase (lockdows) 5th phase (exit from lockdown) ω 9 $\alpha$

Days after 1/22/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

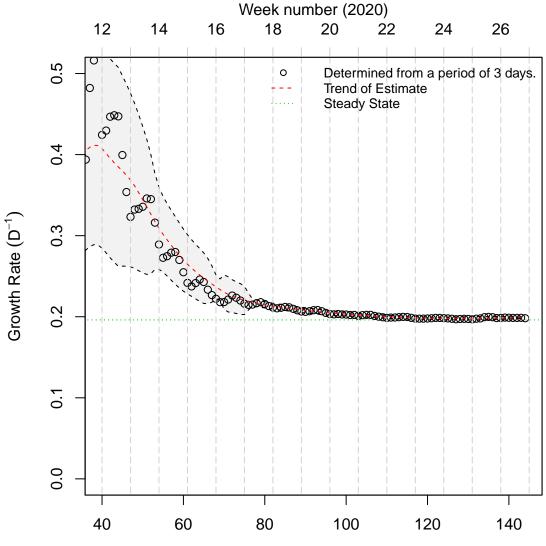
100

150

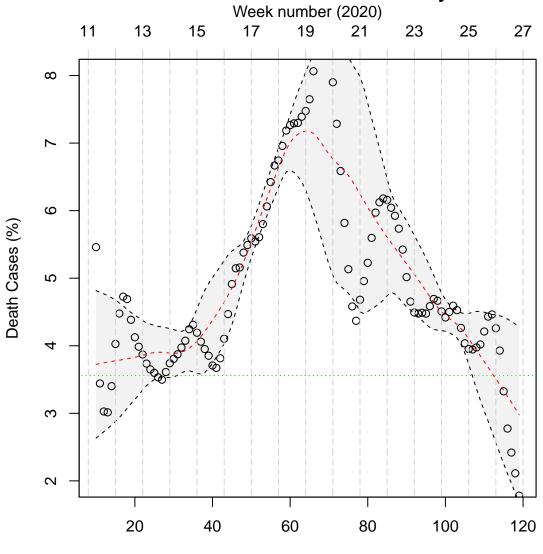
50



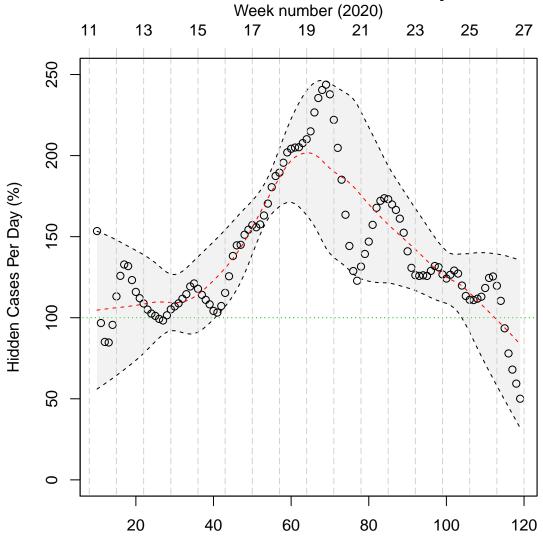
Days after 2/5/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de



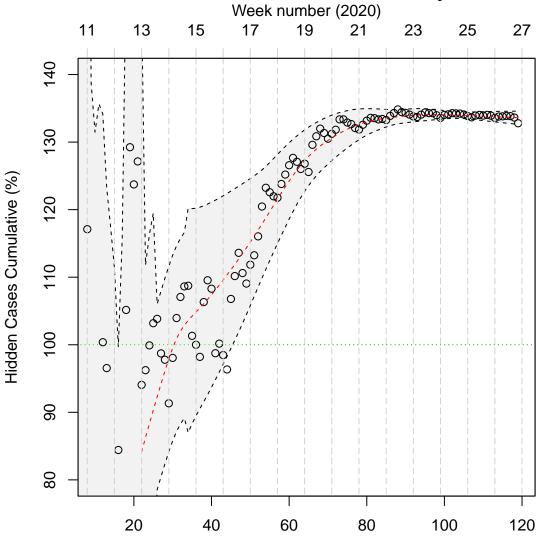
Days after 2/5/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de



Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

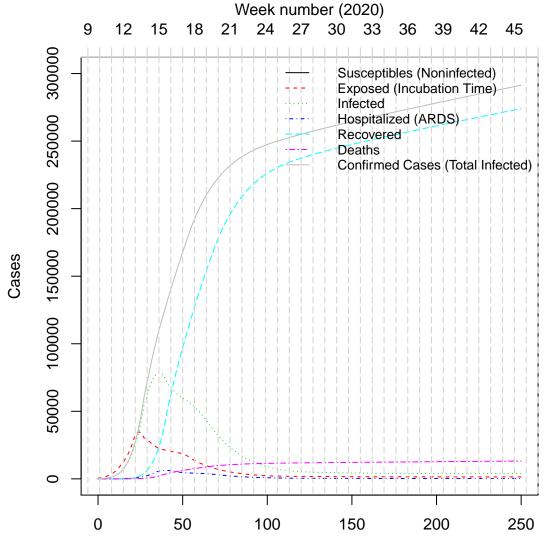


Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de



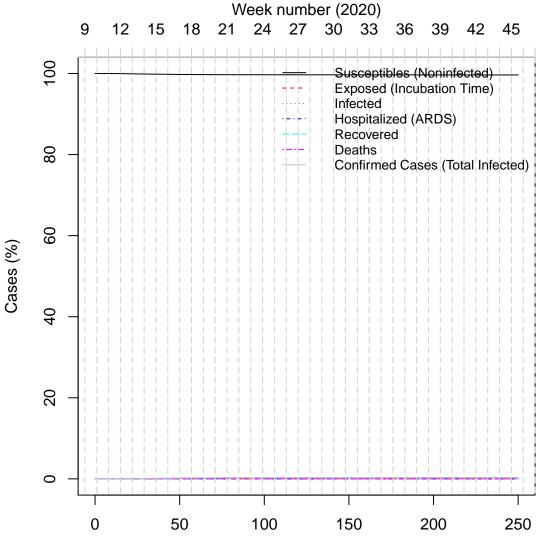
Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

#### Forecast COVID-19 in Germany



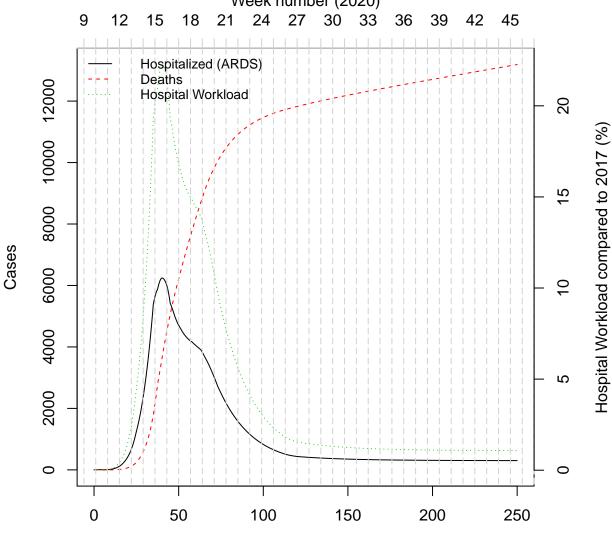
Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

#### Forecast COVID-19 in Germany



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#### Forecast COVID-19 in Germany Week number (2020)



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## Forecast COVID-19 in Germany Week number (2020) 24 45 12 15 18 36 39 42 Hospitalized (ARDS) 0.015 Deaths Hospital Workload 20 Hospital Workload compared to 2017 (%) 15 0.010 Cases (%) 0.005 2 0.000

Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

100

0

### 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+<del>0</del>0

Days after 3/1/20 Created by Sören Thiering (06/29/2020). 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 (06/29/2020). Email: soeren.thiering@hs-anhalt.de

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

90+99

5e+06

4e+06

3e + 06

2e+06

1e+06

0e+00

0

50

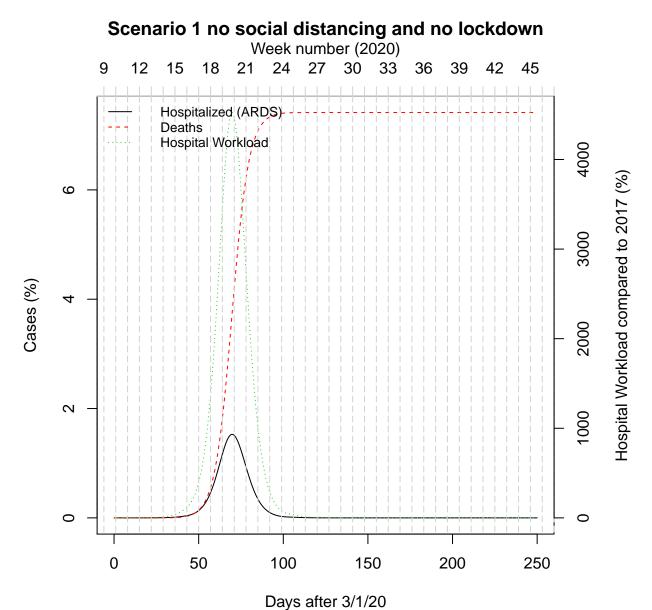
Cases

Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

150

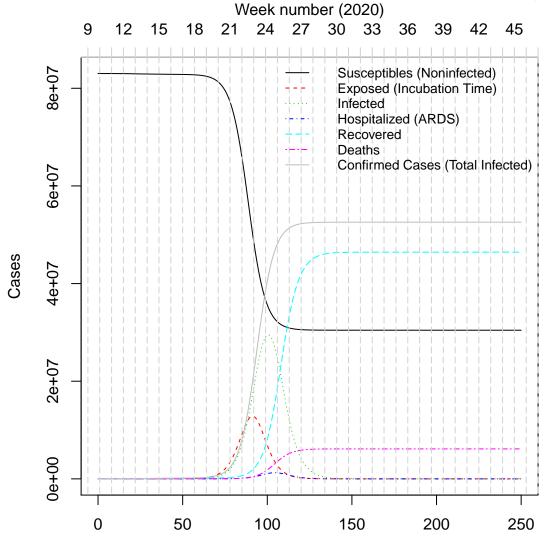
200

100



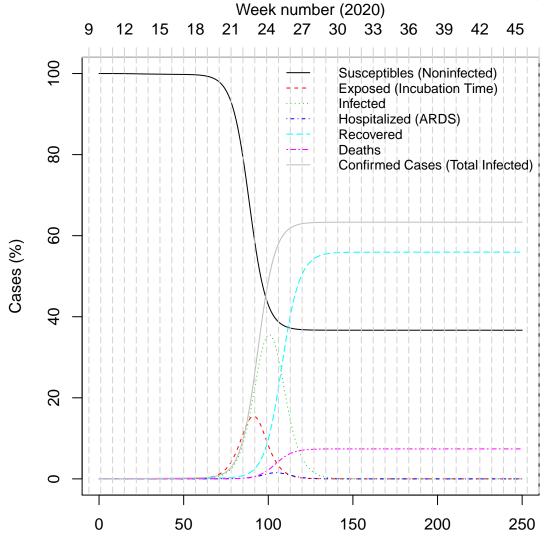
Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

### Scenario 2 exit after day 50 without social distancing



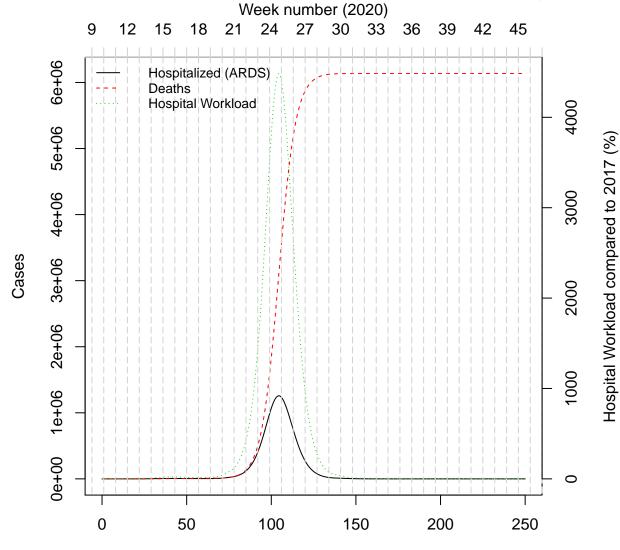
Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

### Scenario 2 exit after day 50 without social distancing



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#### Scenario 2 exit after day 50 without social distancing



Days after 3/1/20 Created by Sören Thiering (06/29/2020). 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 Hospital Workload compared to 2017 (%) 9 Cases (%) $\alpha$

Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

100

50

#### Scenario 3 exit after day 50 with social distancing Week number (2020) 9 24 45 12 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+<del>0</del>0

Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

150

200

250

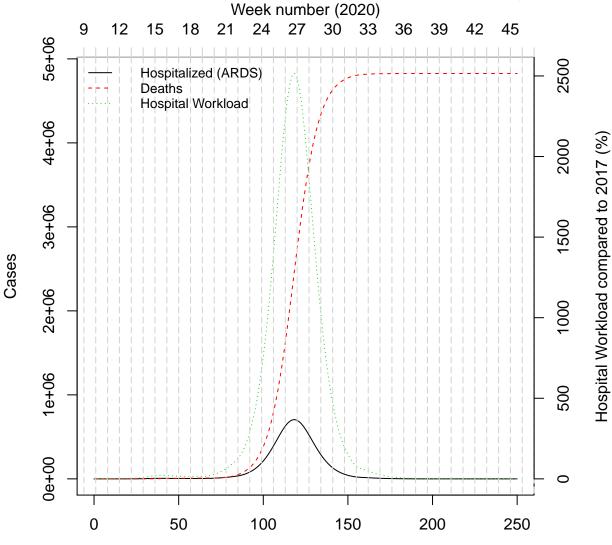
100

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 (%)

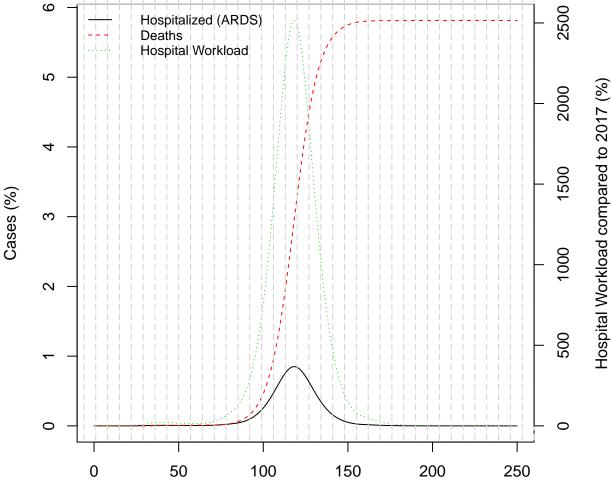
Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

#### Scenario 3 exit after day 50 with social distancing



Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

## Scenario 3 exit after day 50 with social distancing Week number (2020) 12 15 18 36 45 2500 Hospitalized (ARDS) Deaths Hospital Workload



Days after 3/1/20 Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

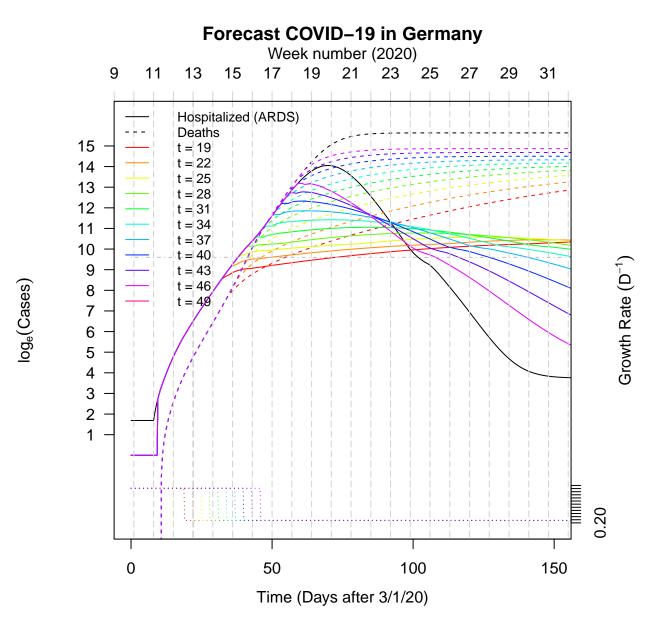
#### Forecast COVID-19 in Germany Week number (2020) 9 11 13 15 17 25 27 29 31 Hospitalized (ARDS) 6000000 Deaths R0 = 0.45500000 R0 = 0.6R0 = 0.85000000 R0 = 14500000 R0 = 1.2R0 = 1.44000000 R0 = 1.6R0 = 1.83500000 Growth Rate $(\mathsf{D}^{-1})$ R0 = 2R0 = 2.23000000 Cases R0 = 2.42500000 2000000 1500000 1000000 500000 0 0.32 0 50 100 150 Time (Days after 3/1/20)

Created by Sören Thiering (06/29/2020). Email: soeren.thiering@hs-anhalt.de

#### Forecast COVID-19 in Germany Week number (2020) 9 31 11 13 15 17 19 25 27 29 Hospitalized (ARDS) 6000000 Deaths t = 195500000 t = 22 t = 255000000 t = 284500000 t = 31 t = 344000000 t = 37t = 403500000 Growth Rate (D<sup>-1</sup>) t = 43t = 463000000 Cases t = 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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