Reproduction Rate (R_t) Estimate
United States

Legend
— R_t: weighted_average
— Reference Line: $R_t = 1$
  68% Confidence Interval
  95% Confidence Interval

Parameters Used
$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
$Rate_{Mortality}$: 1.00%
$BasicR_0$: 3.4

Presidents Day (Washingtons Birthday)
Memorial Day
Independence Day

Author: Michael Donnelly | twtr: @donnellymjd | www.michaeldonnel.ly
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Reproduction Rate (R_t) Estimates
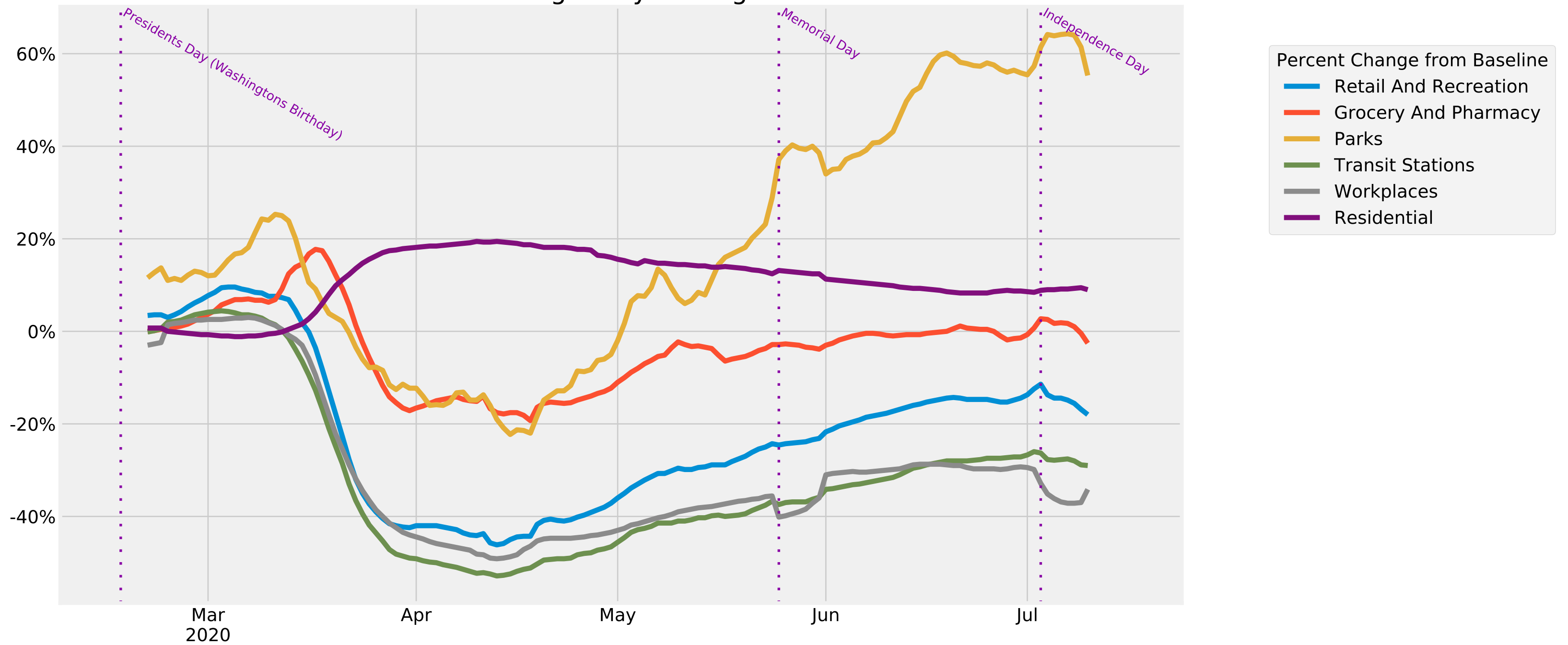## United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario
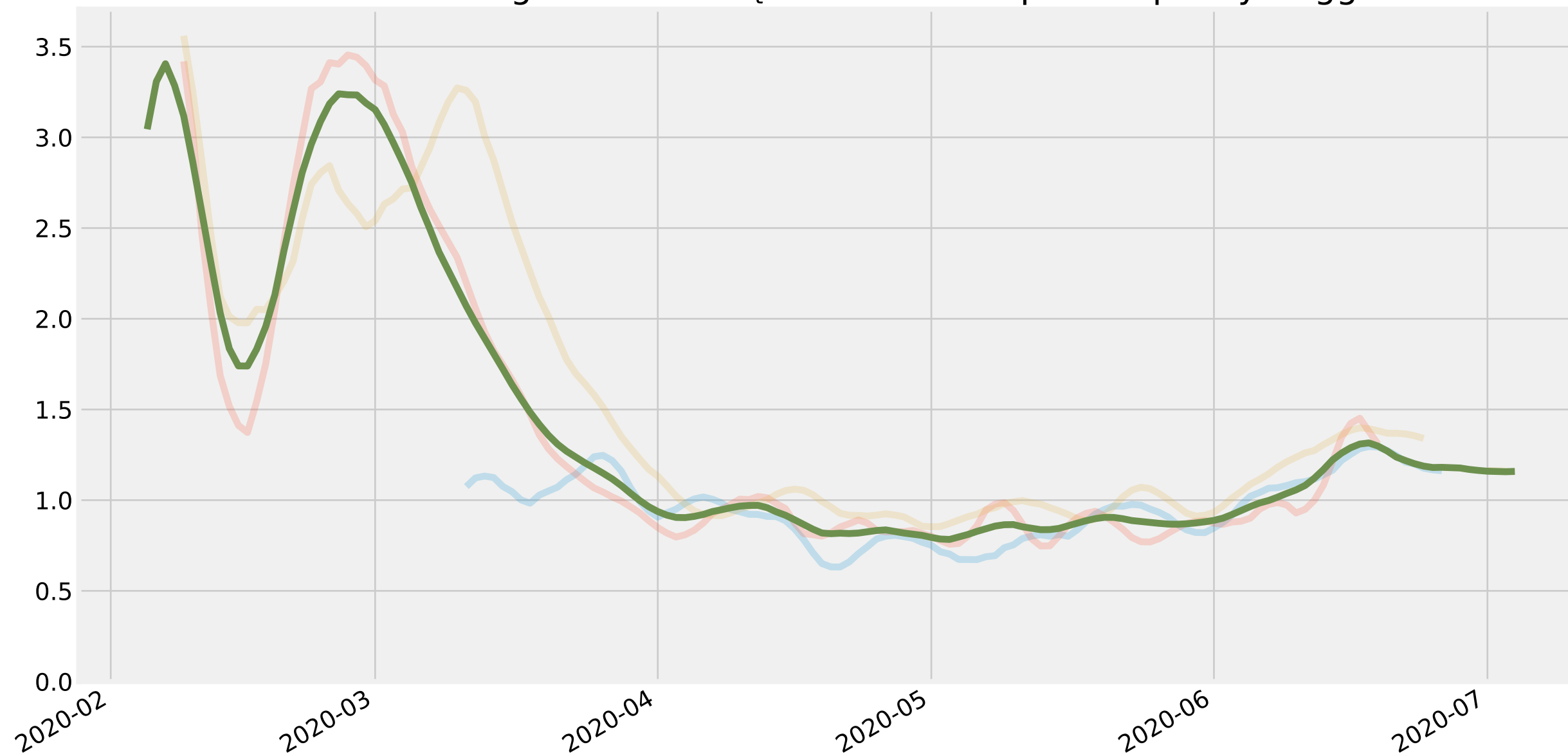
Reproduction Factor Estimates
- test_share
- deaths_daily
- cases_daily
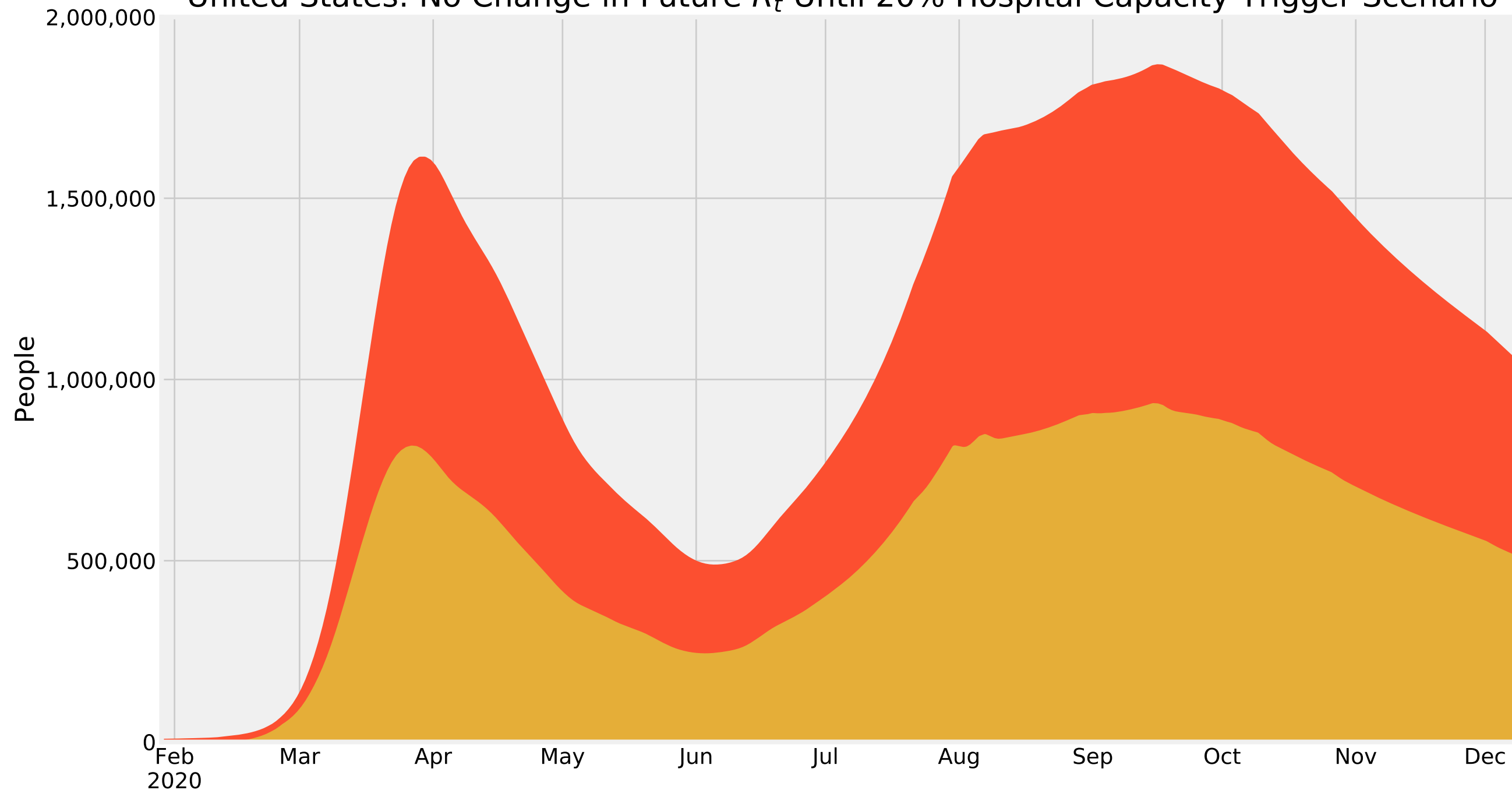- weighted_average

Parameters Used
$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
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$Rate_{Mortality}$: 1.00%
$BasicR_0$: 3.4

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United States: Google Movement Data
Rolling 7-day Average

Presidents Day (Washingtons Birthday)

Memorial Day

Independence Day

Percent Change from Baseline
- Retail And Recreation
- Grocery And Pharmacy
- Parks
- Transit Stations
- Workplaces
- Residential

Mar
2020

Apr

May

Jun

Jul

Simultaneous Infections Forecast
United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario

Lext Axis Legend
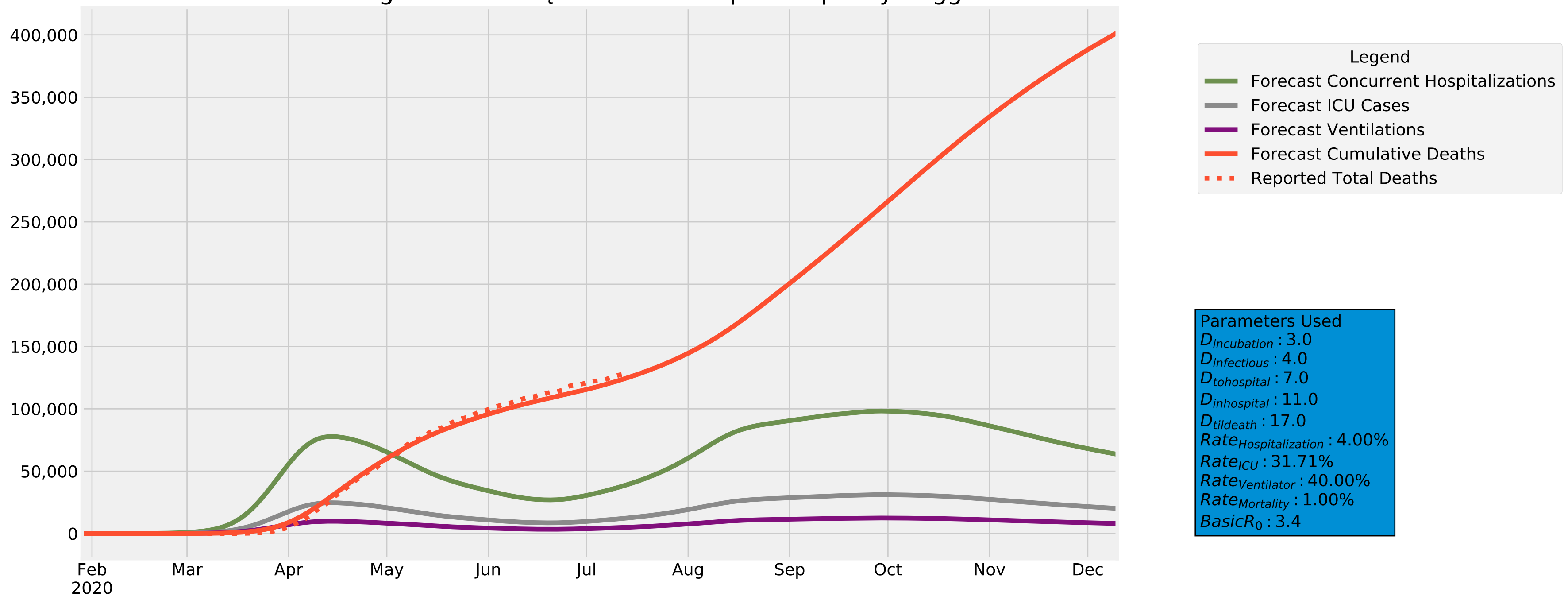- Exposed Population
- Infectious Population

Parameters Used

$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
$Rate_{Mortality}$: 1.00%
$Basic R_0$: 3.4

People

Feb
2020
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
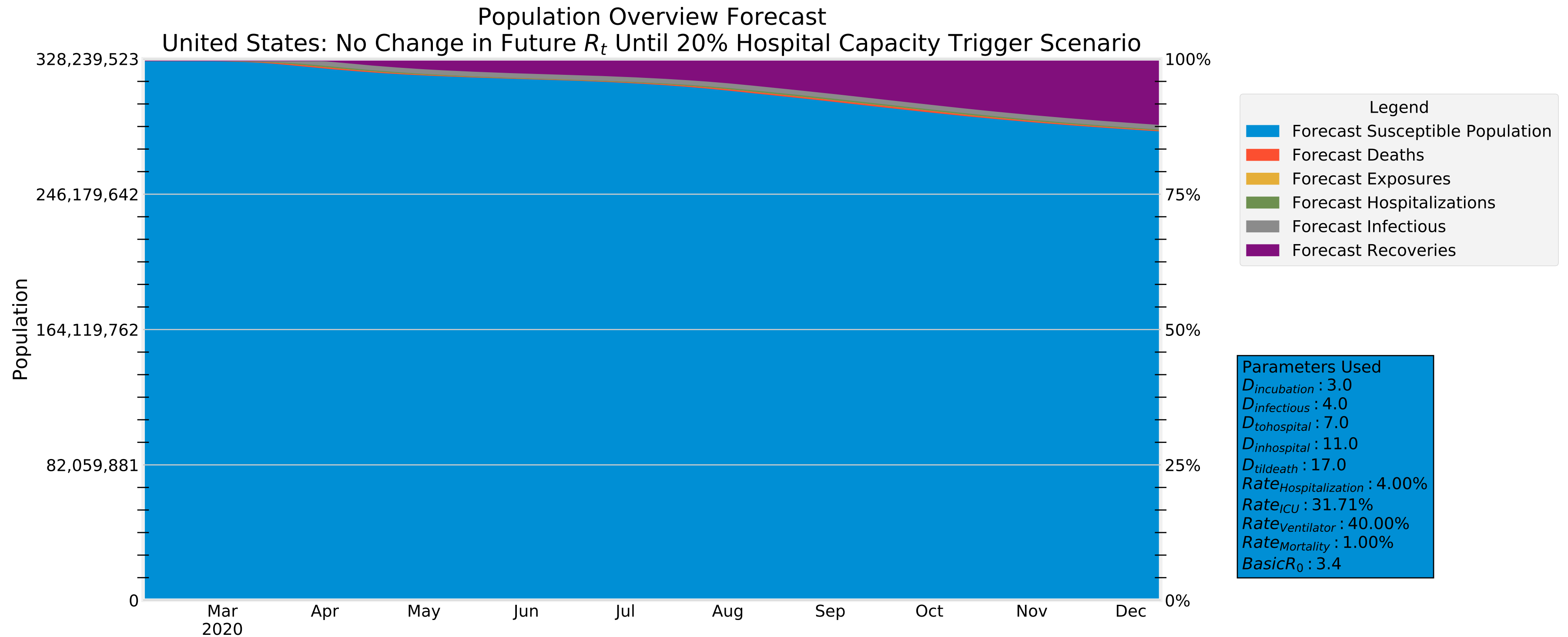Dec

2,000,000
1,500,000
1,000,000
500,000
0

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Hospitalization and Deaths Forecast
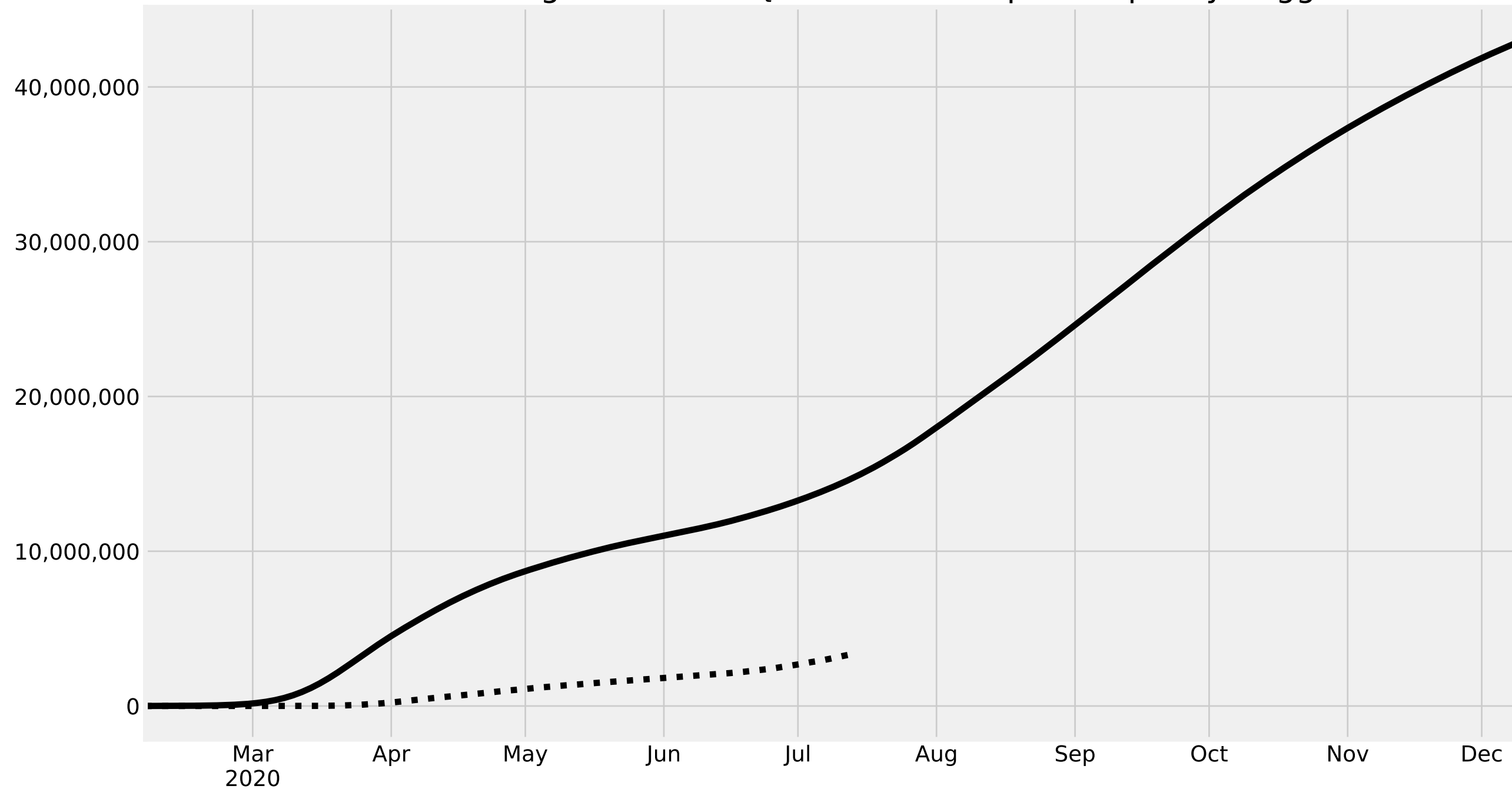## United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario

Legend
- Forecast Concurrent Hospitalizations
- Forecast ICU Cases
- Forecast Ventilations
- Forecast Cumulative Deaths
- Reported Total Deaths

Parameters Used
$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
$Rate_{Mortality}$: 1.00%
$BasicR_0$: 3.4

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Population Overview Forecast
United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario

Population

328,239,523

246,179,642

164,119,762

82,059,881

0

Mar
2020

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

100%

75%

50%

25%

0%

Legend

- Forecast Susceptible Population
- Forecast Deaths
- Forecast Exposures
- Forecast Hospitalizations
- Forecast Infectious
- Forecast Recoveries

Parameters Used

$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
$Rate_{Mortality}$: 1.00%
$BasicR_0$: 3.4

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Cumulative Infections Forecast
United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario
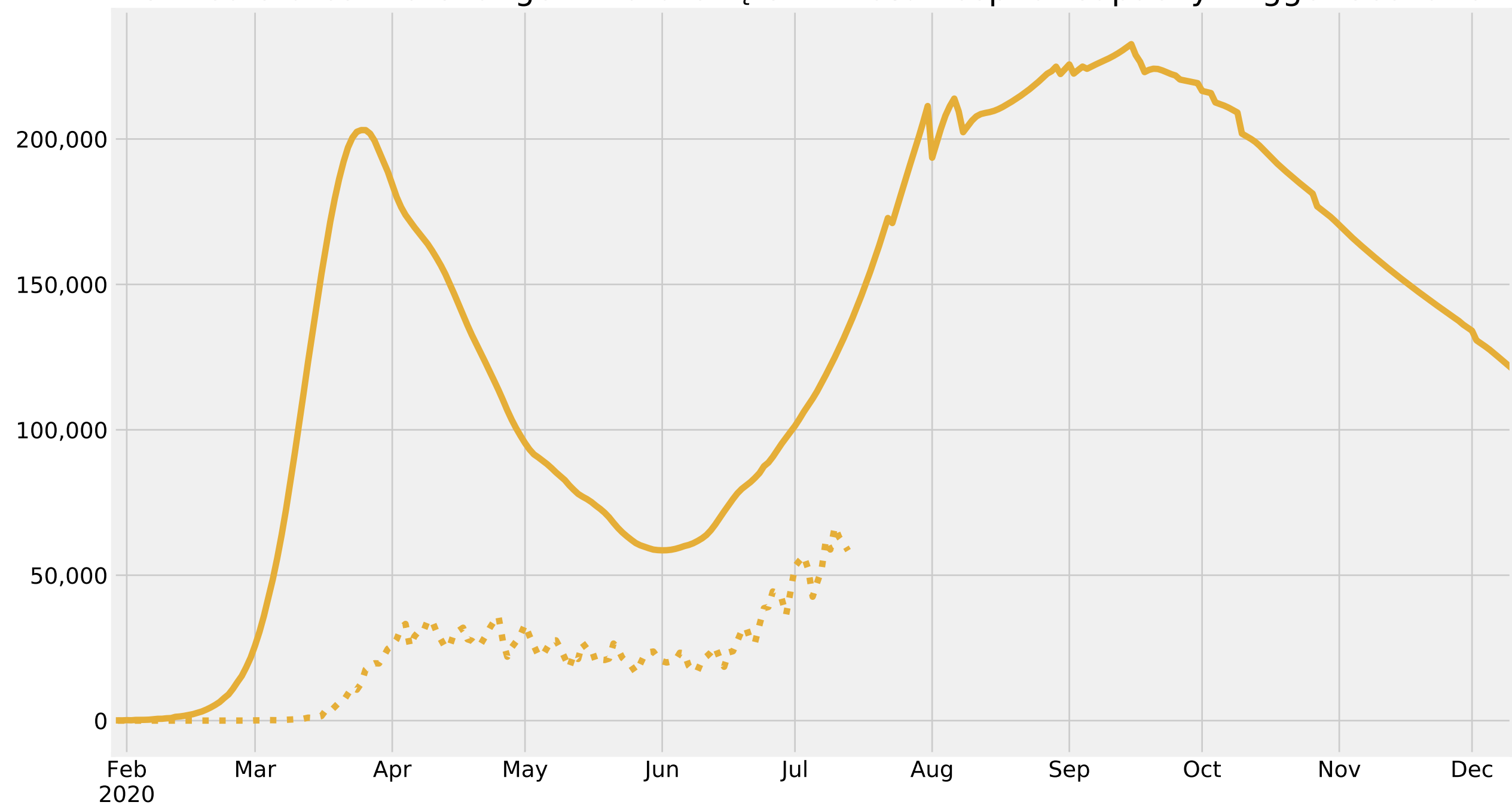

Legend
— Forecast Cumulative Infections
····· Reported Cumulative Infections

Parameters Used
$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
$Rate_{Mortality}$: 1.00%
$Basic R_0$: 3.4

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Daily Exposures Forecast
United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario
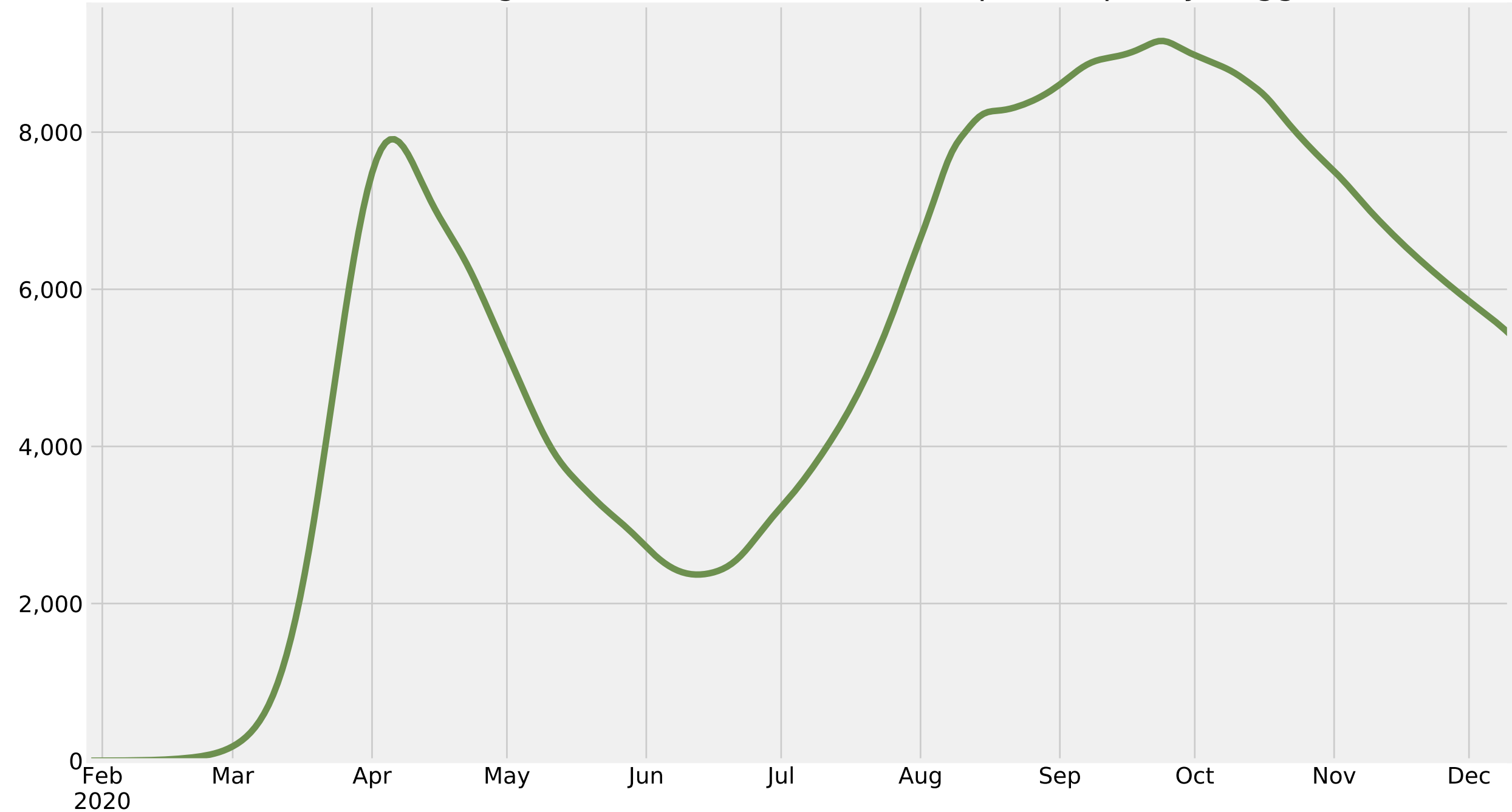
Legend

— Forecast Daily New Infections (Exposed)

······ Reported Daily New Infections (Exposed)

Parameters Used

$D_{incubation}$: 3.0

$D_{infectious}$: 4.0

$D_{tohospital}$: 7.0

$D_{inhospital}$: 11.0

$D_{tildeath}$: 17.0

$Rate_{Hospitalization}$: 4.00%

$Rate_{ICU}$: 31.71%

$Rate_{Ventilator}$: 40.00%

$Rate_{Mortality}$: 1.00%

$BasicR_0$: 3.4

Daily Hospital Admissions Forecast
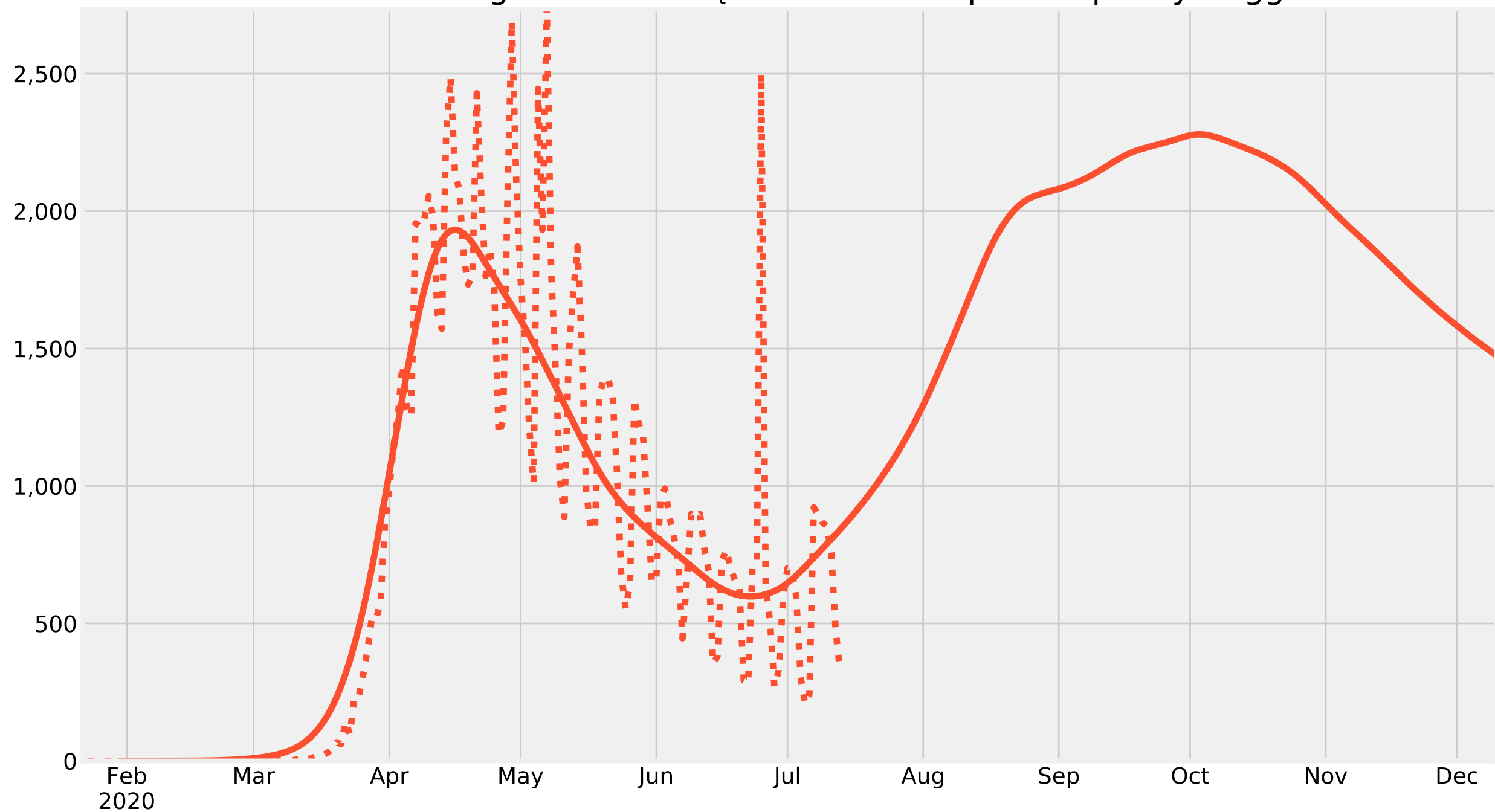## United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario

Parameters Used
$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
$Rate_{Mortality}$: 1.00%
$BasicR_0$: 3.4

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Daily Deaths Forecast
United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario
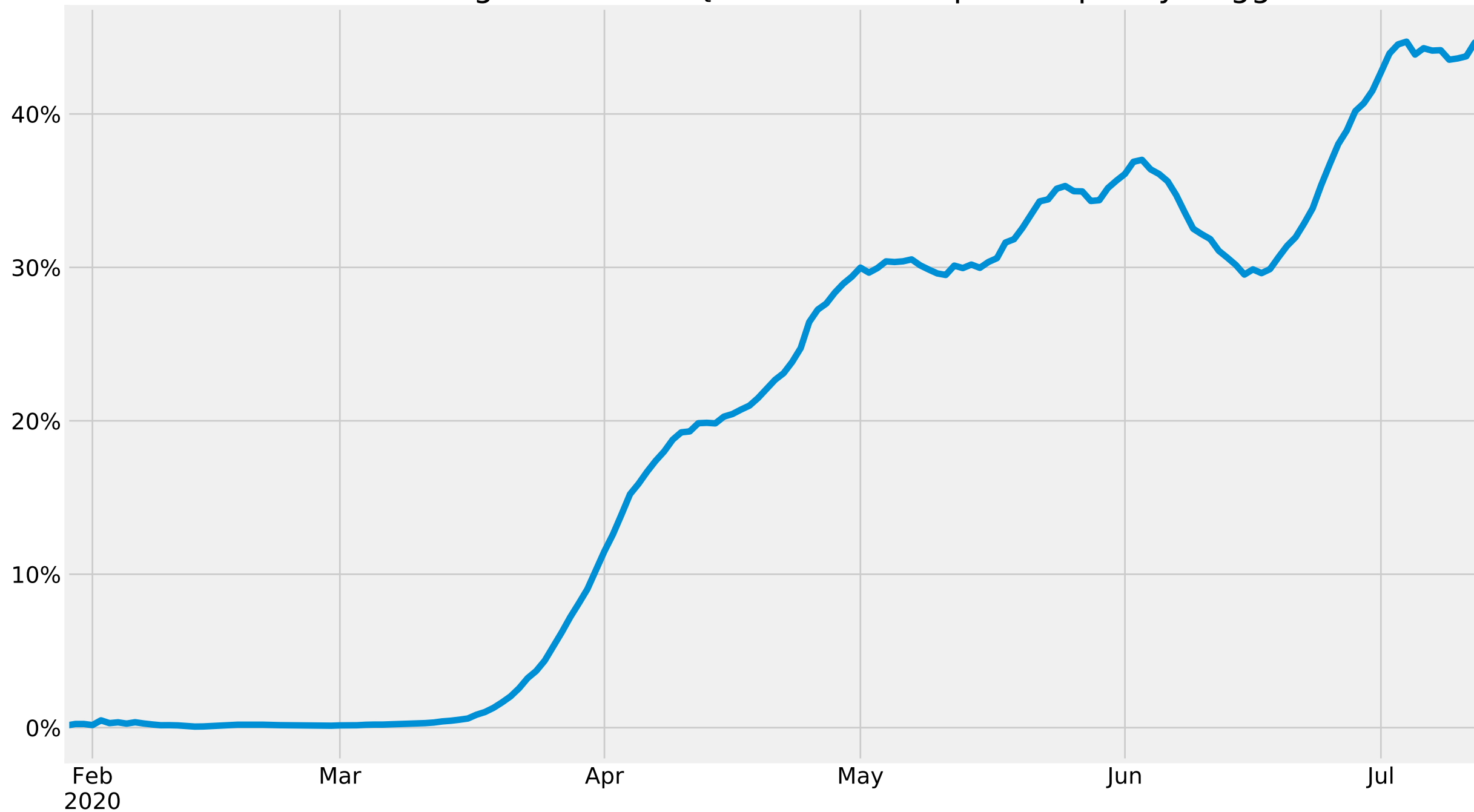
Legend
— Forecast Daily Deaths
···· Reported Daily Deaths

Parameters Used
$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
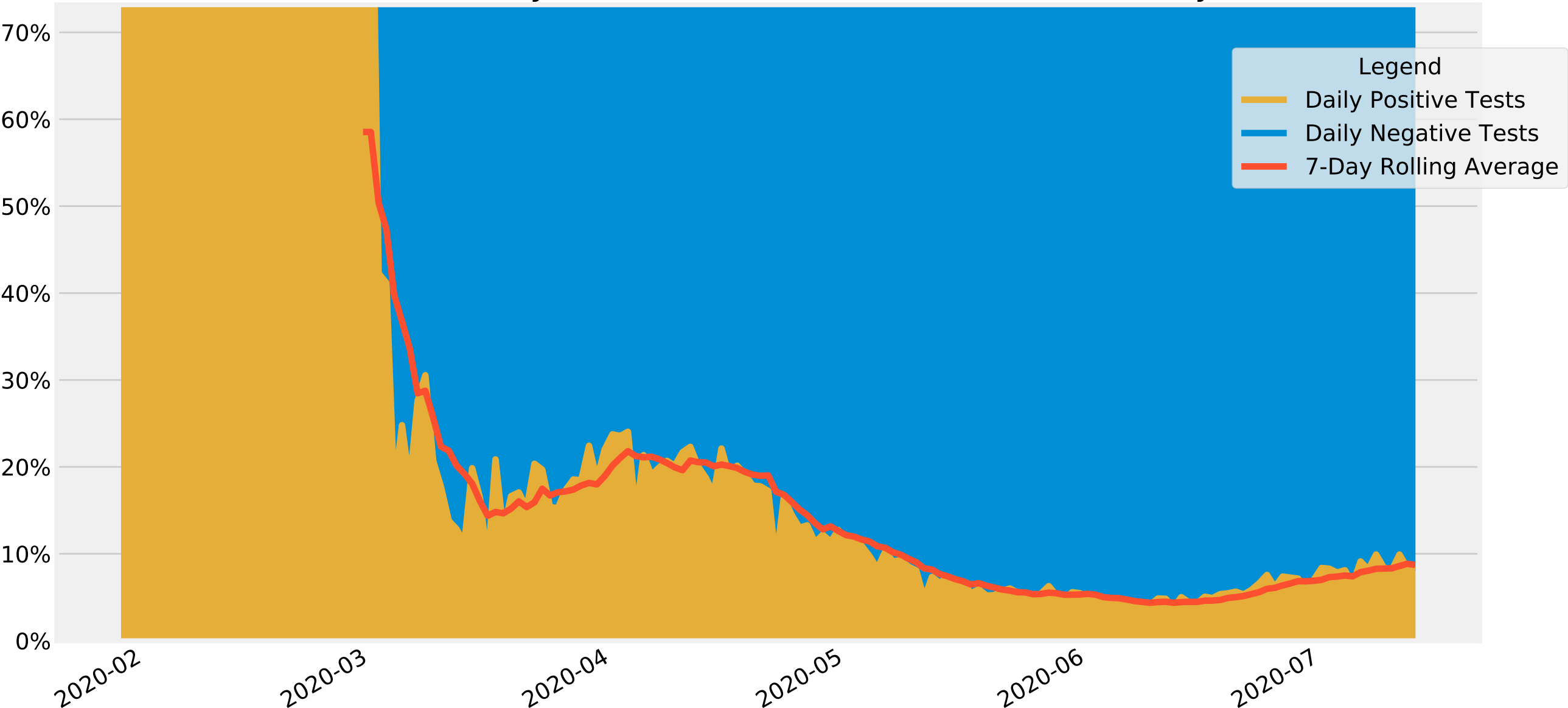$Rate_{Mortality}$: 1.00%
$BasicR_0$: 3.4

COVID-19 Daily Infection Detection Rate
## United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario

Parameters Used
$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
$Rate_{Mortality}$: 1.00%
$BasicR_0$: 3.4

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United States: Daily Positive COVID-19 Test Share (Positivity Rate)

Legend
- Daily Positive Tests
- Daily Negative Tests
- 7-Day Rolling Average

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United States: Positive COVID-19 Tests Per Day
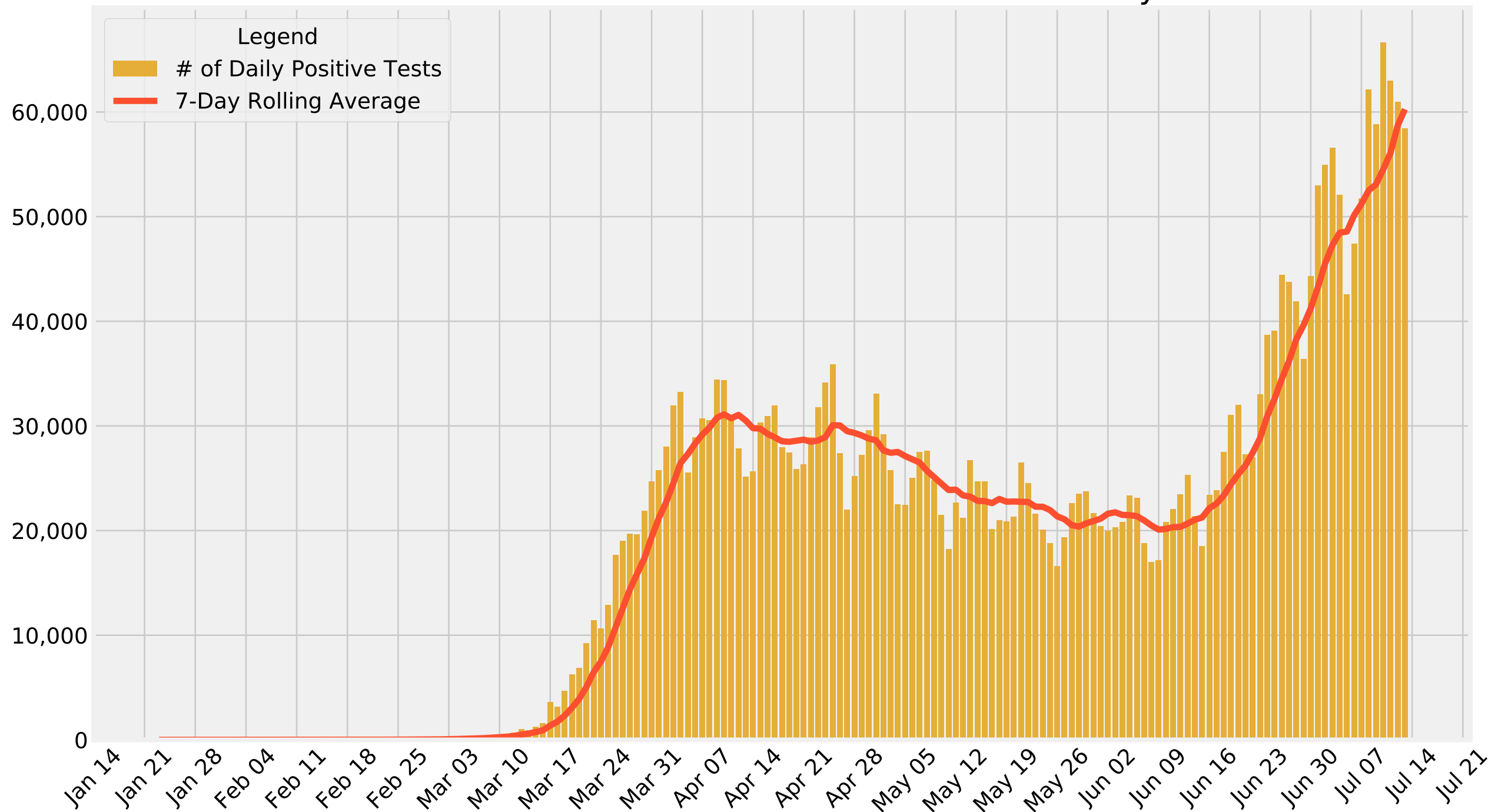
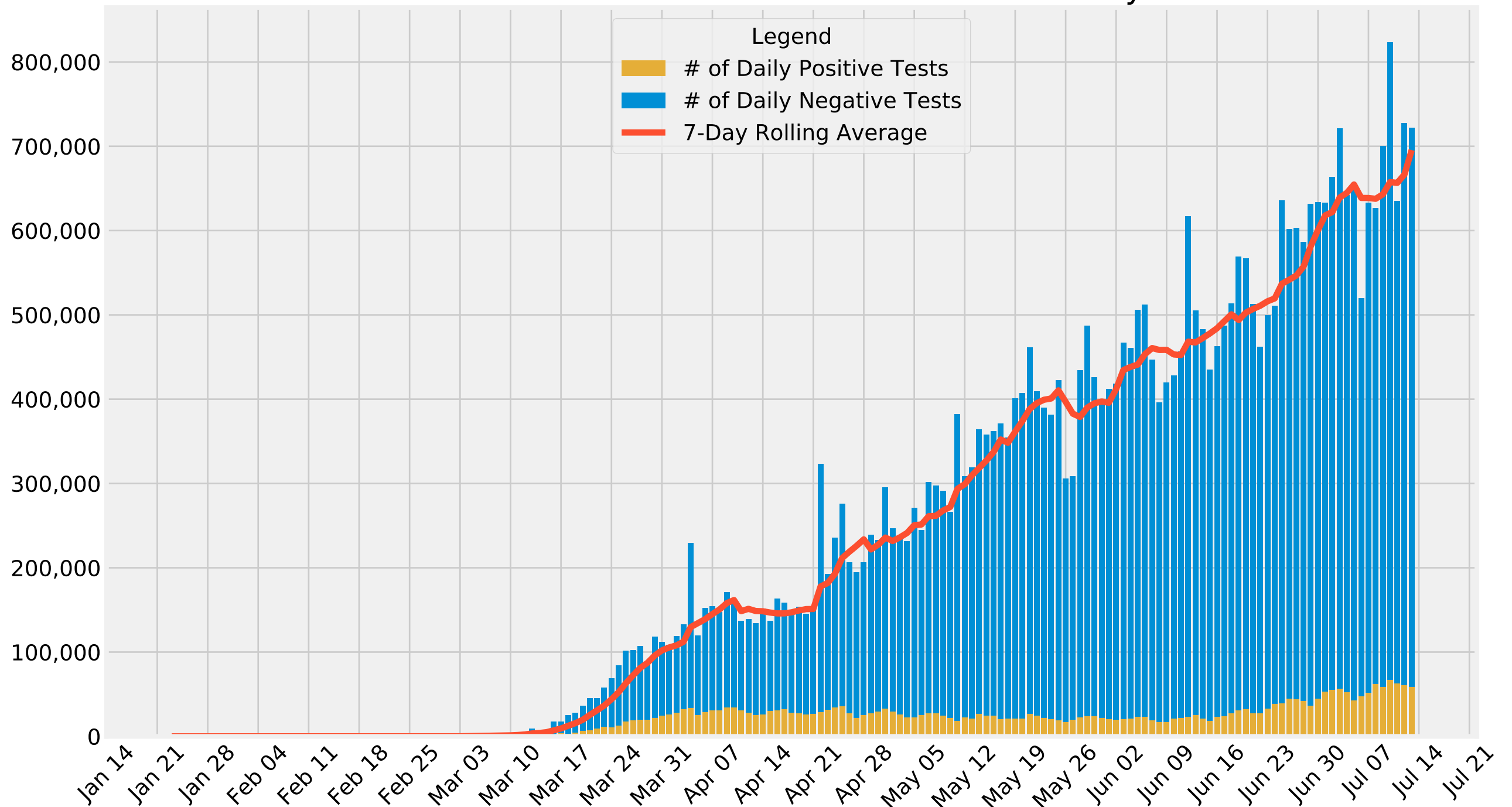**Legend**
- # of Daily Positive Tests
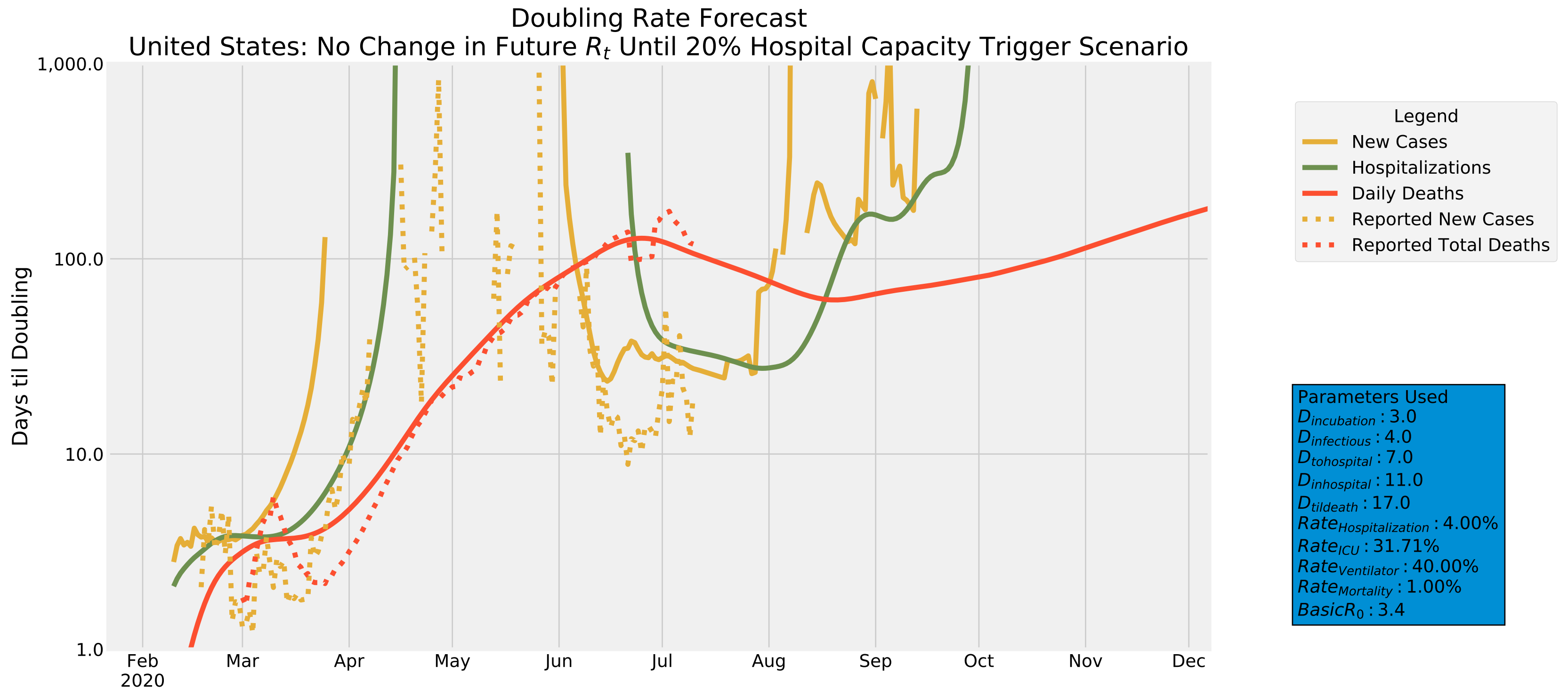- 7-Day Rolling Average

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United States: Total COVID-19 Tests Per Day

Legend
- # of Daily Positive Tests
- # of Daily Negative Tests
- 7-Day Rolling Average

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Doubling Rate Forecast
United States: No Change in Future R_t Until 20% Hospital Capacity Trigger Scenario

Legend
- New Cases
- Hospitalizations
- Daily Deaths
- Reported New Cases
- Reported Total Deaths

Parameters Used
$D_{incubation}$: 3.0
$D_{infectious}$: 4.0
$D_{tohospital}$: 7.0
$D_{inhospital}$: 11.0
$D_{tildeath}$: 17.0
$Rate_{Hospitalization}$: 4.00%
$Rate_{ICU}$: 31.71%
$Rate_{Ventilator}$: 40.00%
$Rate_{Mortality}$: 1.00%
$BasicR_0$: 3.4

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