# Kansas: COVID-19 Cases Per 100k Residents



cases_per100k
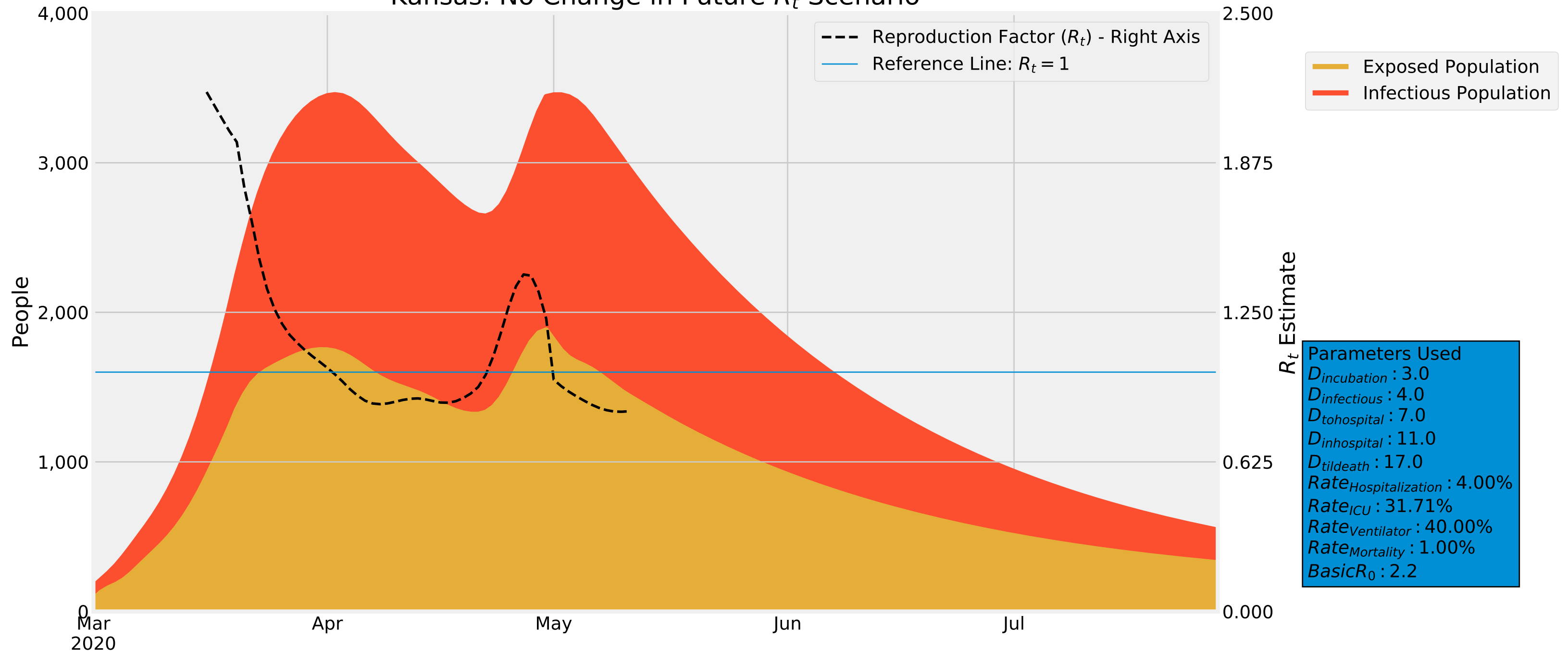
- > 1,000
- 900 - 1,000
- 700 - 800
- 600 - 700
- 500 - 600
- 400 - 500
- 300 - 400
- 200 - 300
- 100 - 200
- 0 - 100
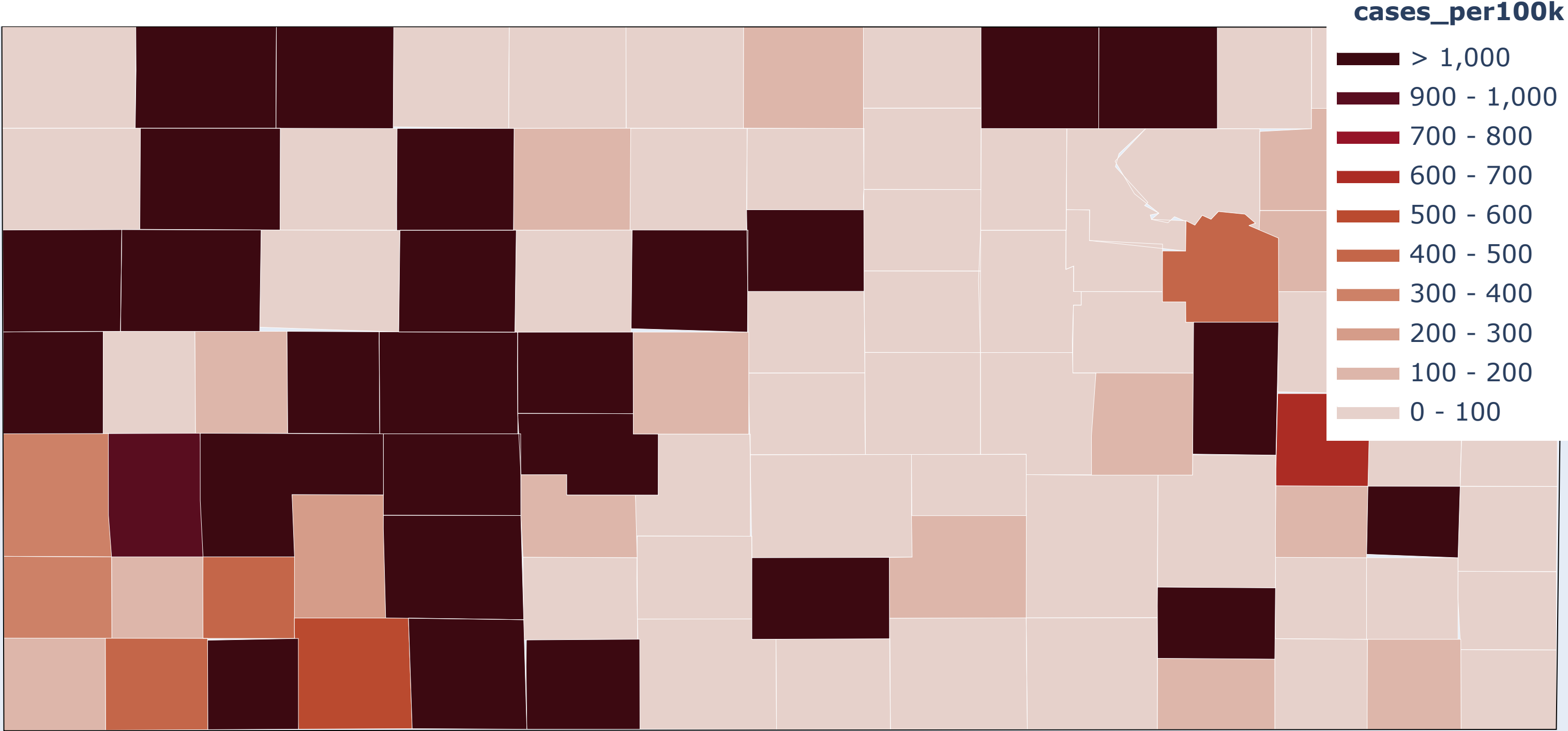
# Reproduction Rate ($R_t$) Estimates
## Kansas: No Change in Future $R_t$ Scenario



Legend:
- rt_deaths_daily
- rt_hosp_admits
- rt_cases_daily
- rt_pos_test_share_daily
- rt_joint_est

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%
$BasicR_0$ : 2.2
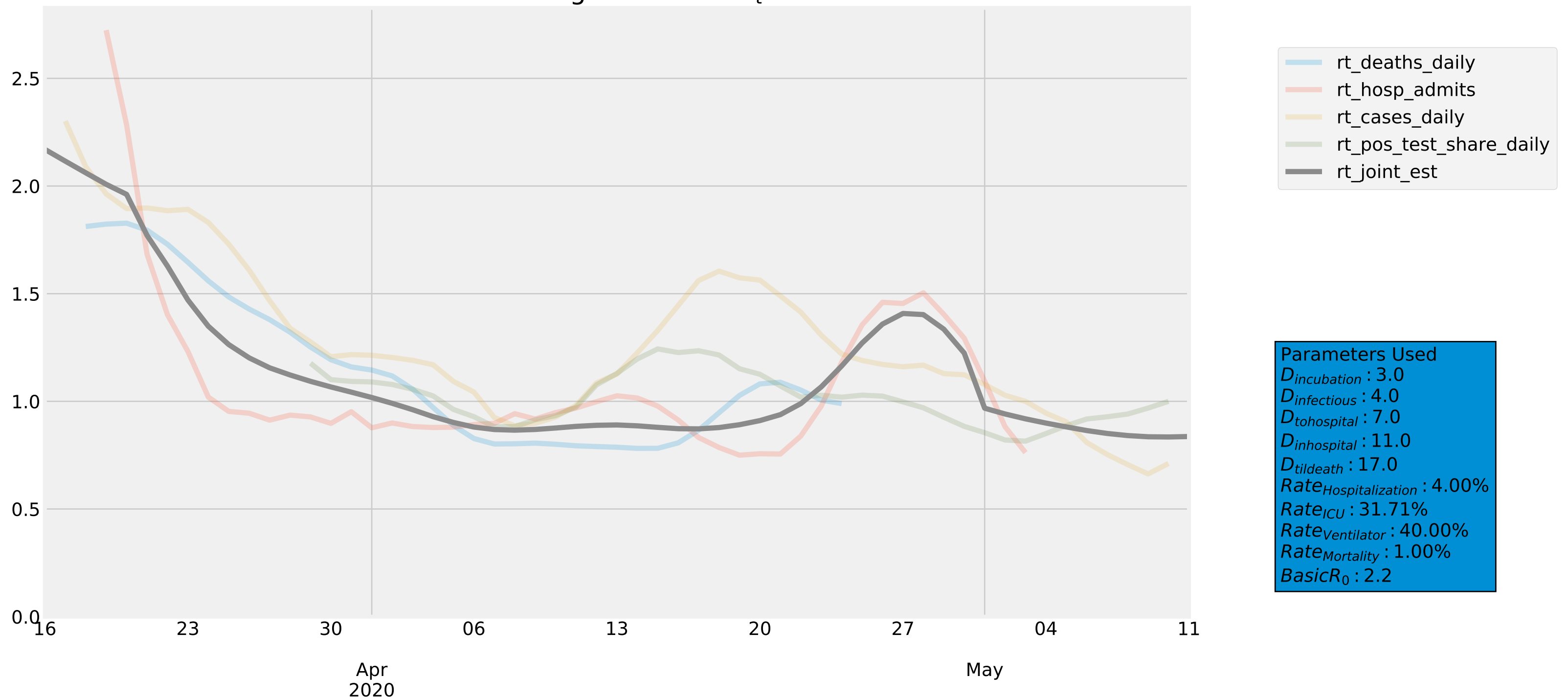
Author: Michael Donnelly (twtr: @donnellymjd)
Chart created on 19 May 2020

Simultaneous Infections Forecast
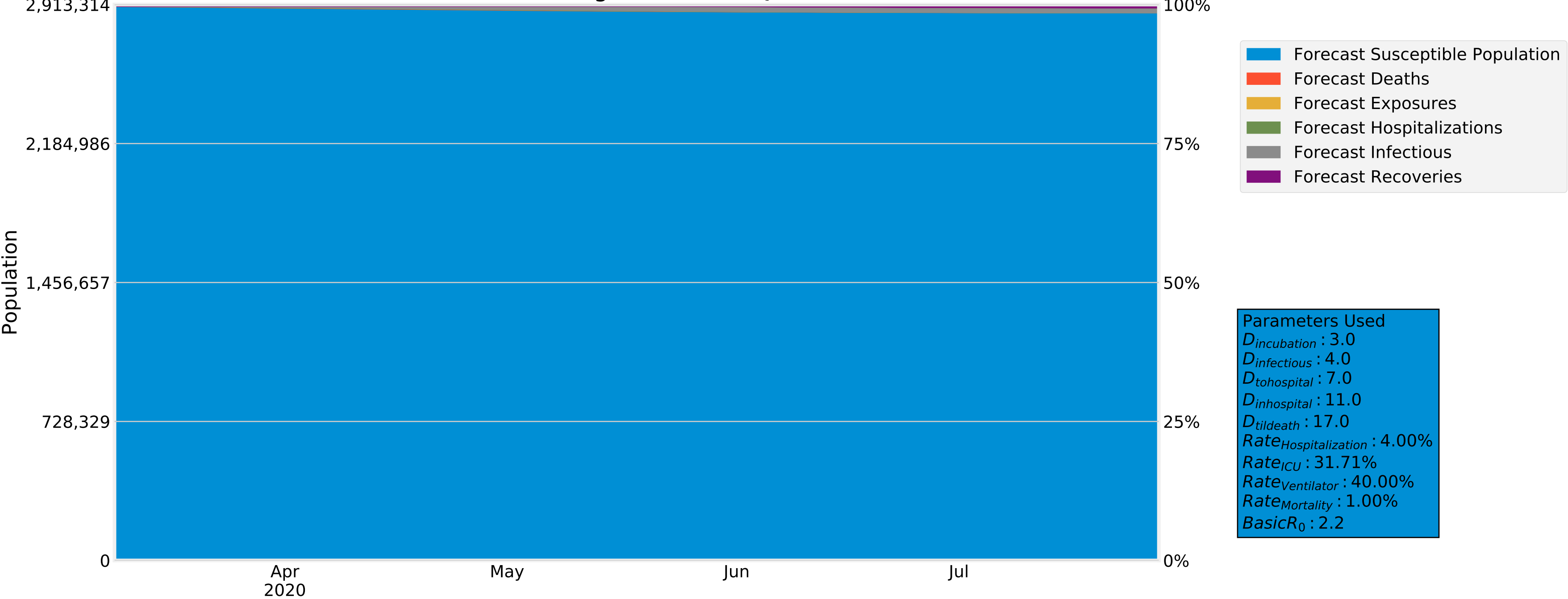Kansas: No Change in Future $R_t$ Scenario

Legend:
- Reproduction Factor ($R_t$) - Right Axis
- Reference Line: $R_t = 1$
- Exposed Population
- Infectious Population

Y-axis (left): People — 0, 1,000, 2,000, 3,000, 4,000

Y-axis (right): $R_t$ Estimate — 0.000, 0.625, 1.250, 1.875, 2.500

X-axis: Mar 2020, Apr, May, Jun, Jul

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%
$BasicR_0$ : 2.2

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# Hospitalization and Deaths Forecast
## Kansas: No Change in Future $R_t$ 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%
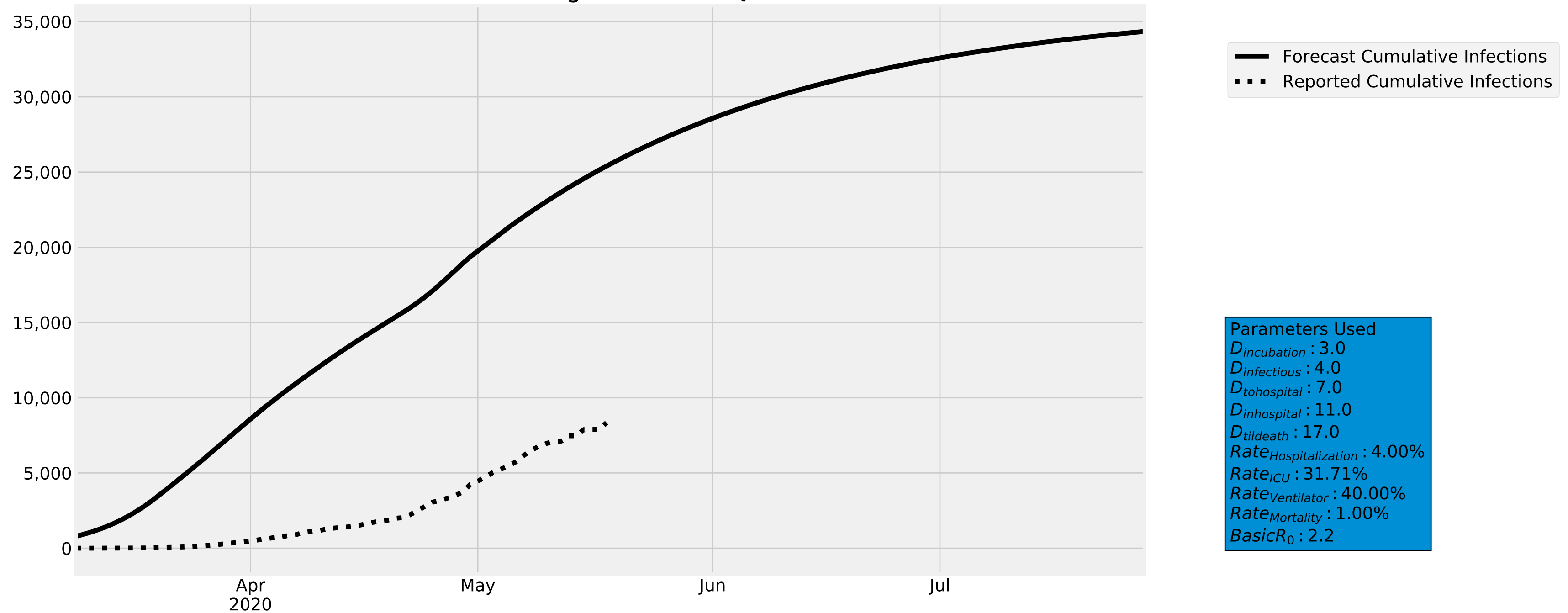$Rate_{Mortality}$ : 1.00%
$BasicR_0$ : 2.2
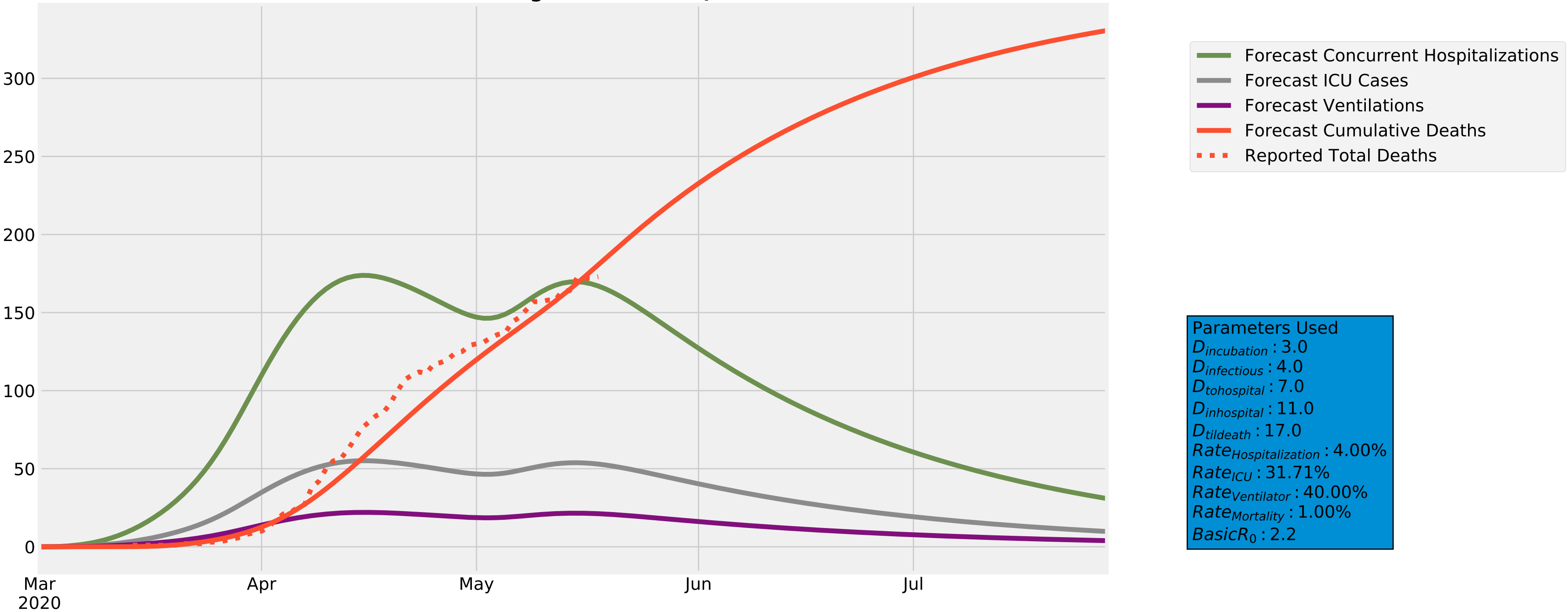
Author: Michael Donnelly (twtr: @donnellymjd)
Chart created on 19 May 2020

# Population Overview Forecast
## Kansas: No Change in Future $R_t$ Scenario



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%
$BasicR_0$ : 2.2

# Cumulative Infections Forecast
## Kansas: No Change in Future $R_t$ Scenario

—— 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%
$BasicR_0$ : 2.2

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Chart created on 19 May 2020

Daily Exposures Forecast
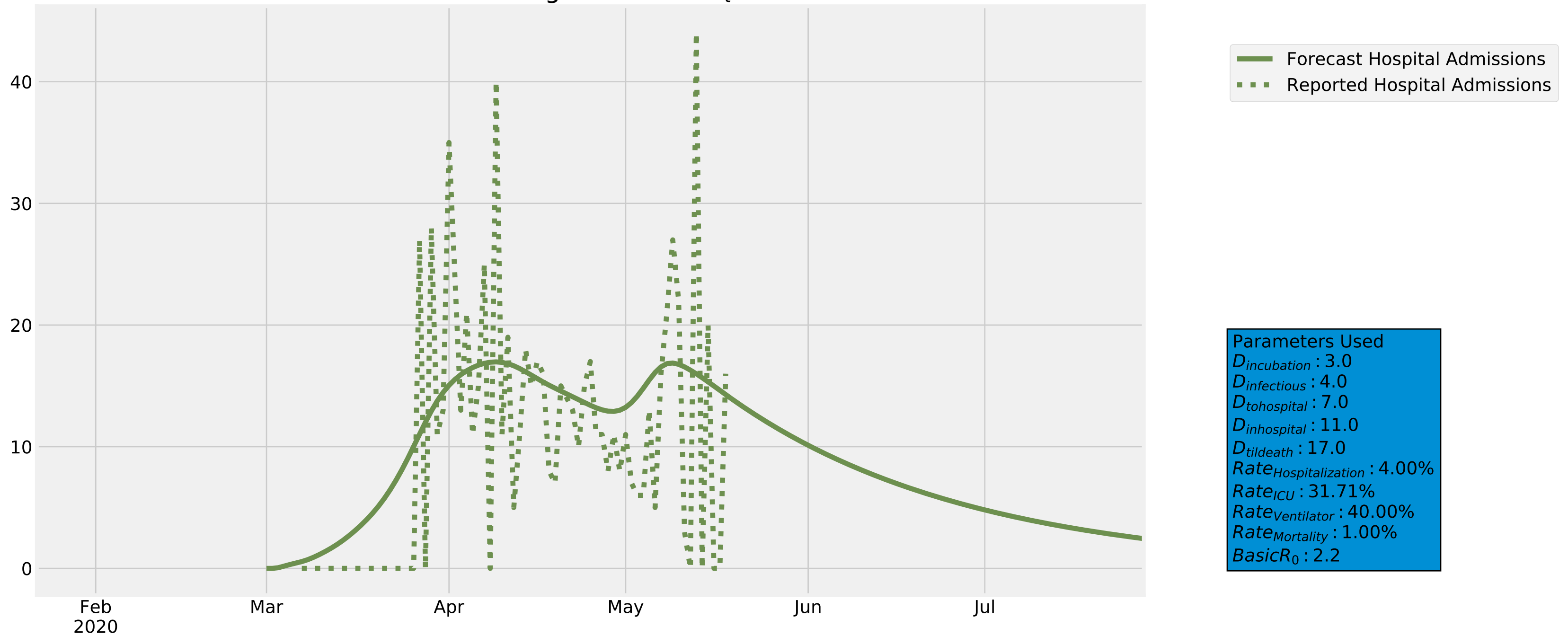Kansas: No Change in Future $R_t$ Scenario
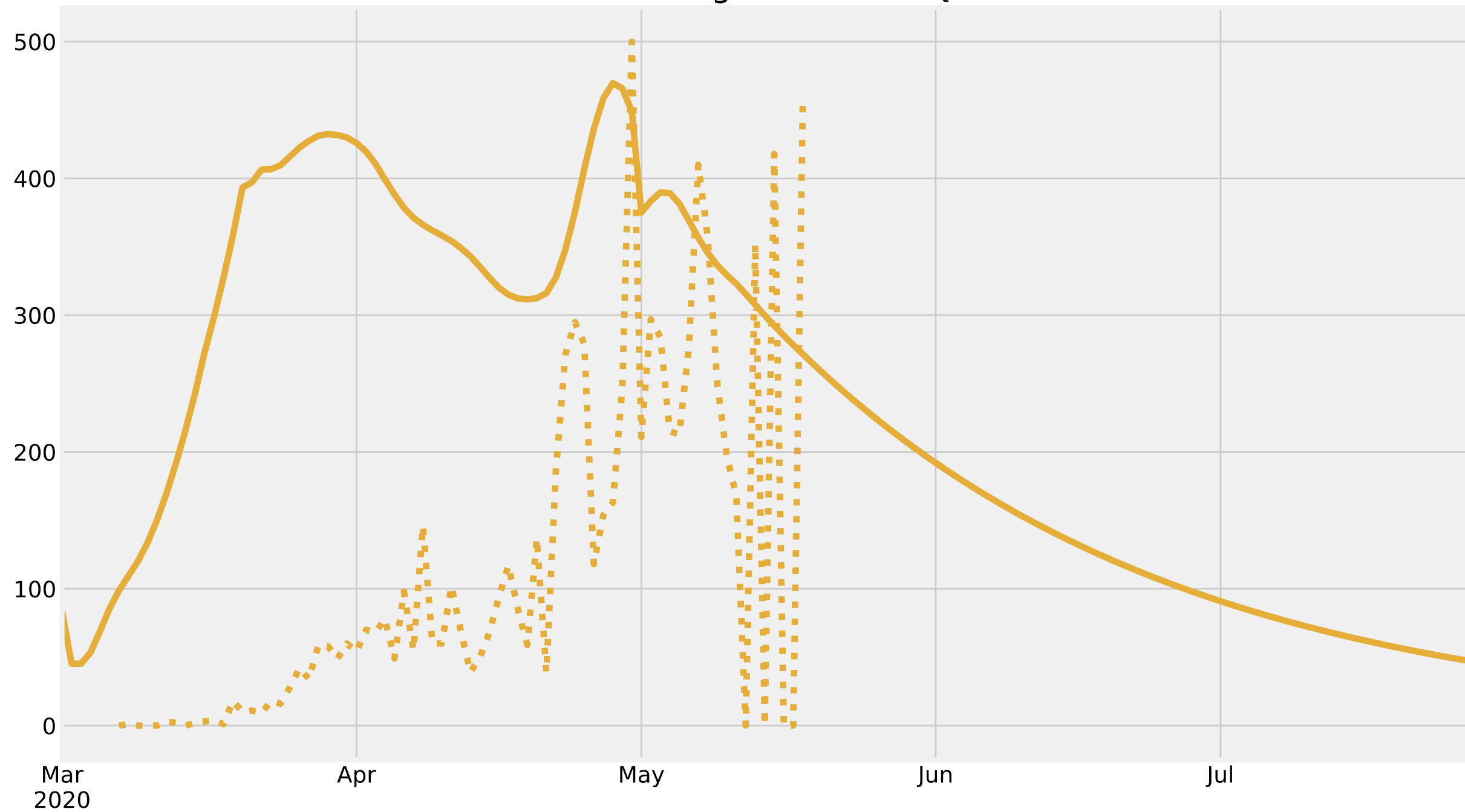
Forecast Daily New Infections (Exposed)
Reported Daily New Infections (Exposed)

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%
$BasicR_0$ : 2.2

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Daily Hospital Admissions Forecast
Kansas: No Change in Future $R_t$ Scenario

Forecast Hospital Admissions
Reported Hospital Admissions

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%
$BasicR_0$ : 2.2

Author: Michael Donnelly (twtr: @donnellymjd)
Chart created on 19 May 2020

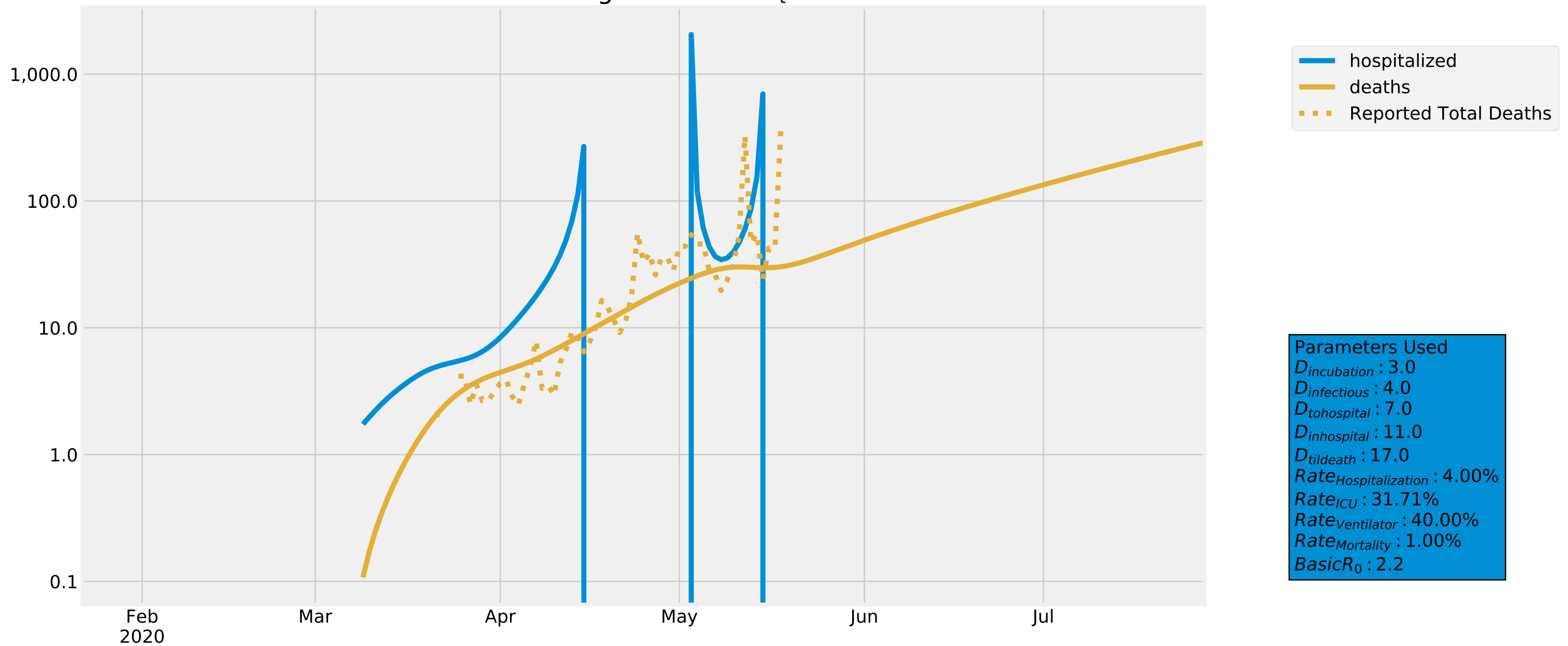Daily Deaths Forecast
Kansas: No Change in Future $R_t$ Scenario
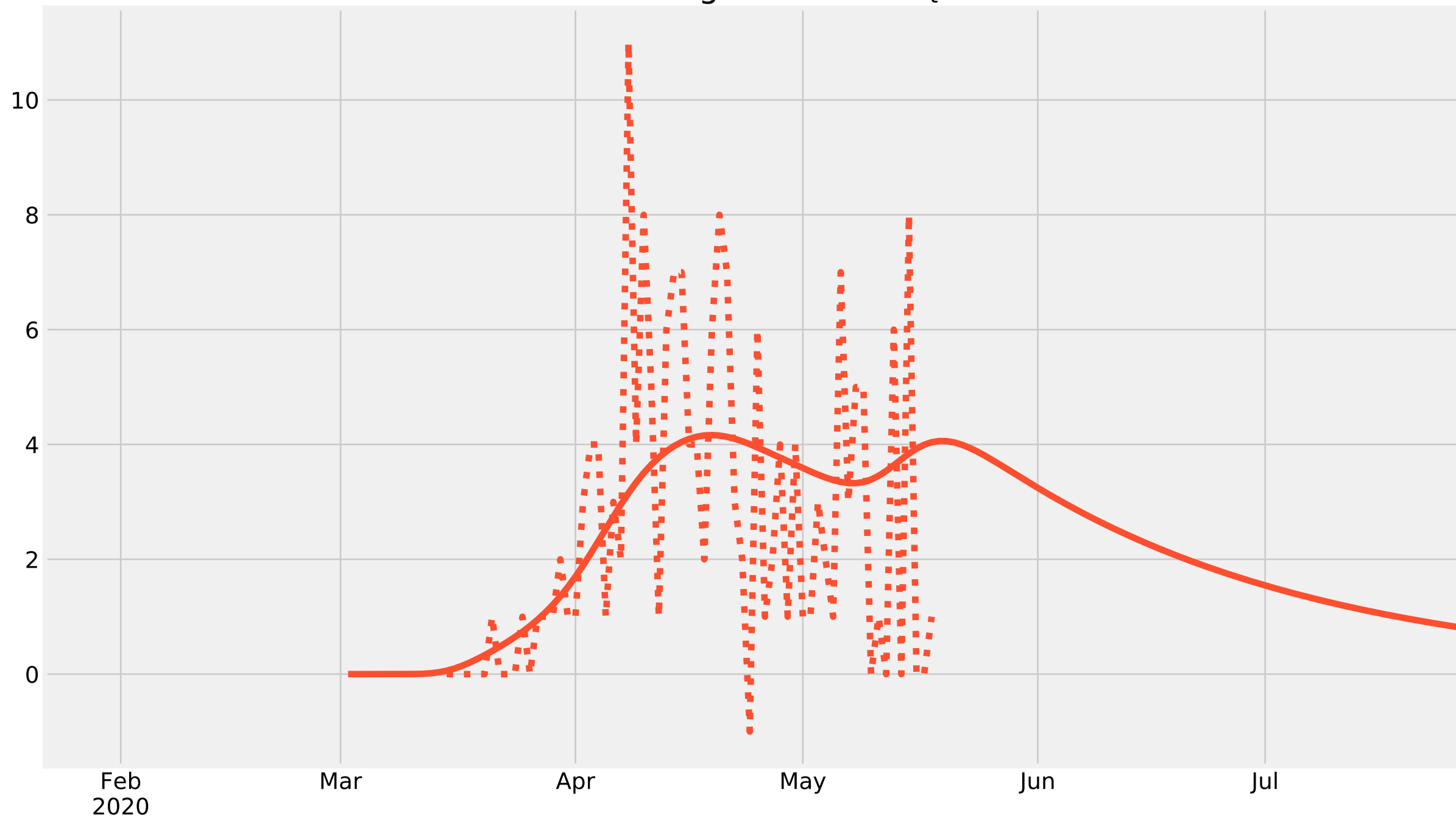
Legend:
— Forecast Daily Deaths
···· Reported Daily Deaths

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%
$BasicR_0$ : 2.2

Author: Michael Donnelly (twtr: @donnellymjd)
Chart created on 19 May 2020

# Doubling Rate Forecast
## Kansas: No Change in Future $R_t$ Scenario



Legend:
- hospitalized
- 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%
$Basic R_0$ : 2.2

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Chart created on 19 May 2020