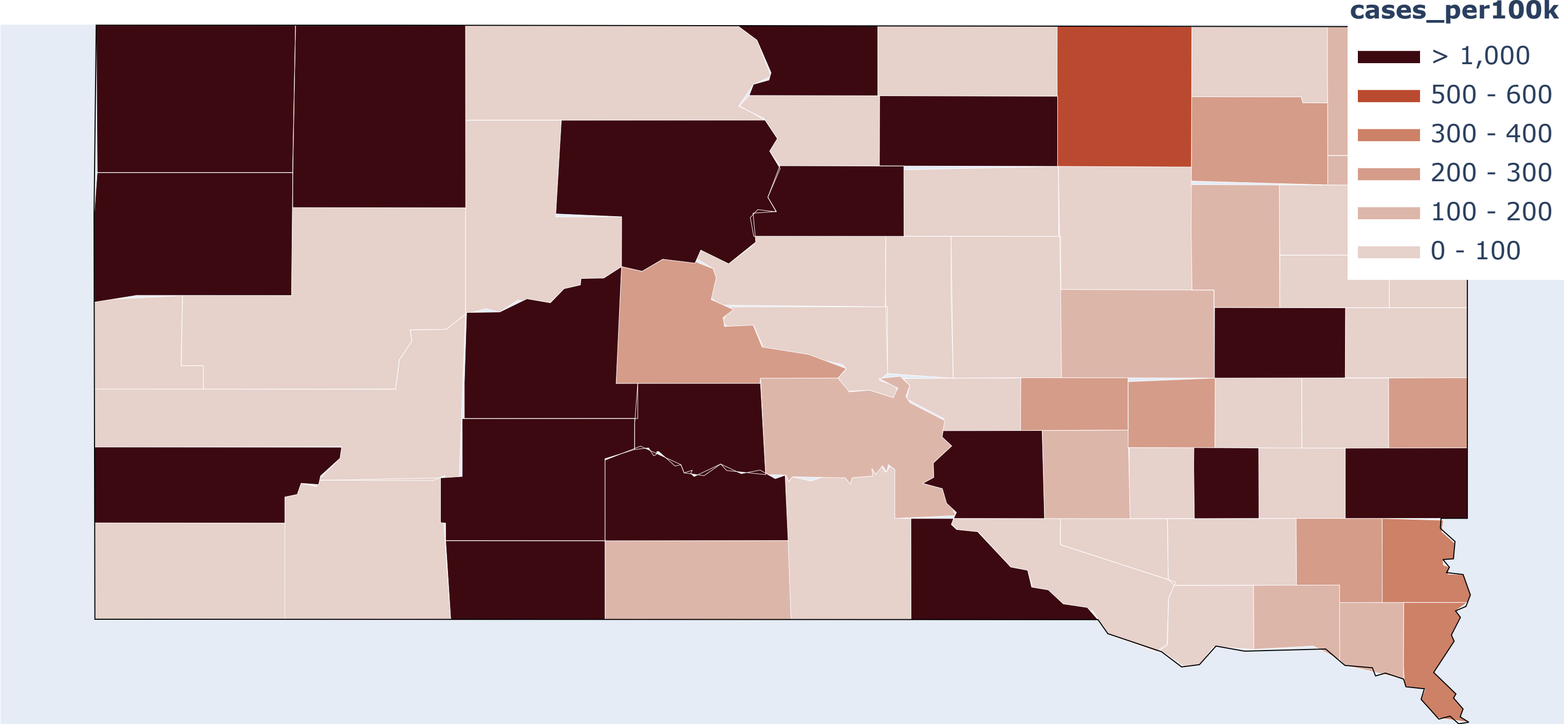
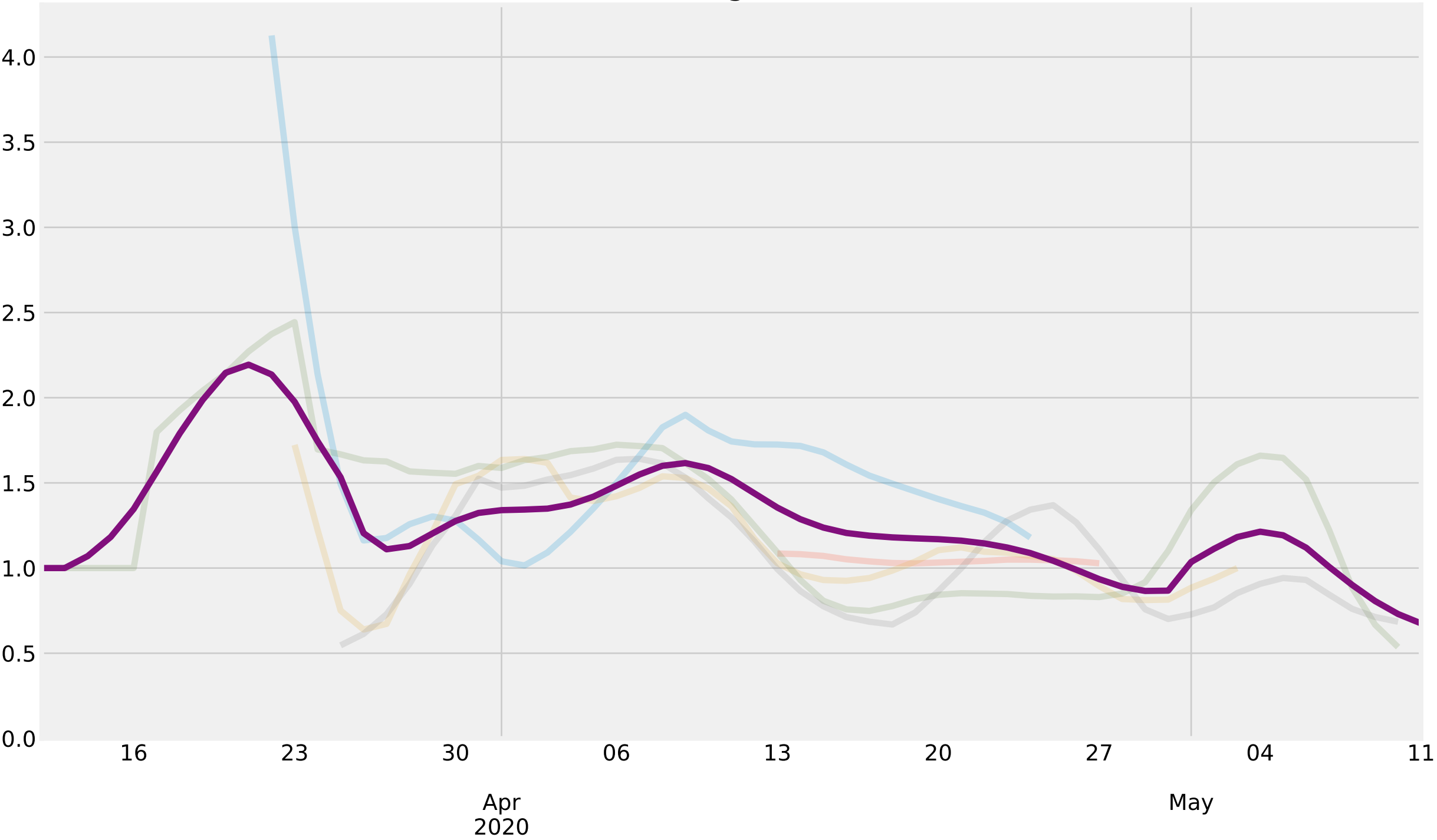


# South Dakota: COVID-19 Cases Per 100k Residents



Reproduction Rate ( $R_t$ ) Estimates  
South Dakota: No Change in Future  $R_t$  Scenario

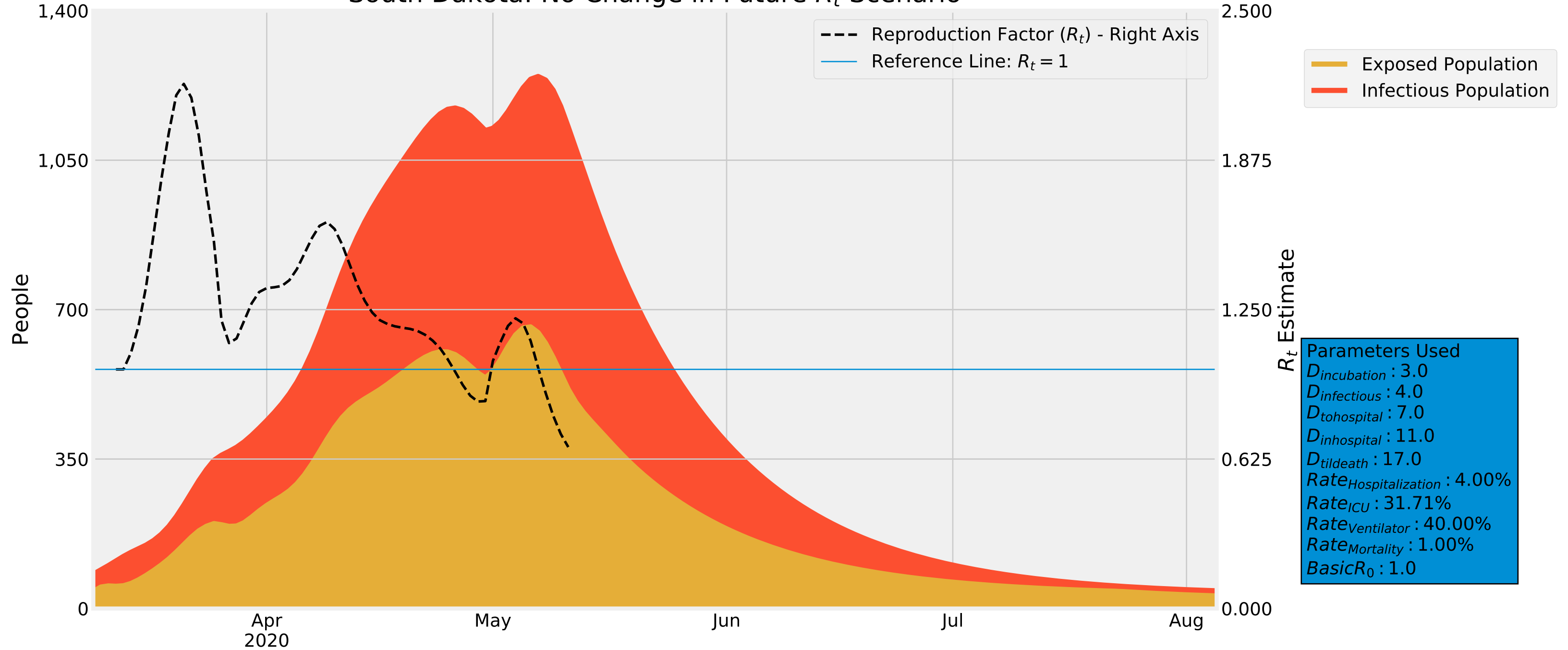


- $rt\_deaths\_daily$
- $rt\_hosp\_concur$
- $rt\_hosp\_admits$
- $rt\_cases\_daily$
- $rt\_pos\_test\_share\_daily$
- $rt\_joint\_est$

Parameters Used  
 $D_{incubation} : 3.0$   
 $D_{infectious} : 4.0$   
 $D_{tohospital} : 7.0$   
 $D_{inhospital} : 11.0$   
 $D_{tildeath} : 17.0$   
 $Rate_{Hospitalization} : 4.00\%$   
 $Rate_{ICU} : 31.71\%$   
 $Rate_{Ventilator} : 40.00\%$   
 $Rate_{Mortality} : 1.00\%$   
 $BasicR_0 : 1.0$

# Simultaneous Infections Forecast

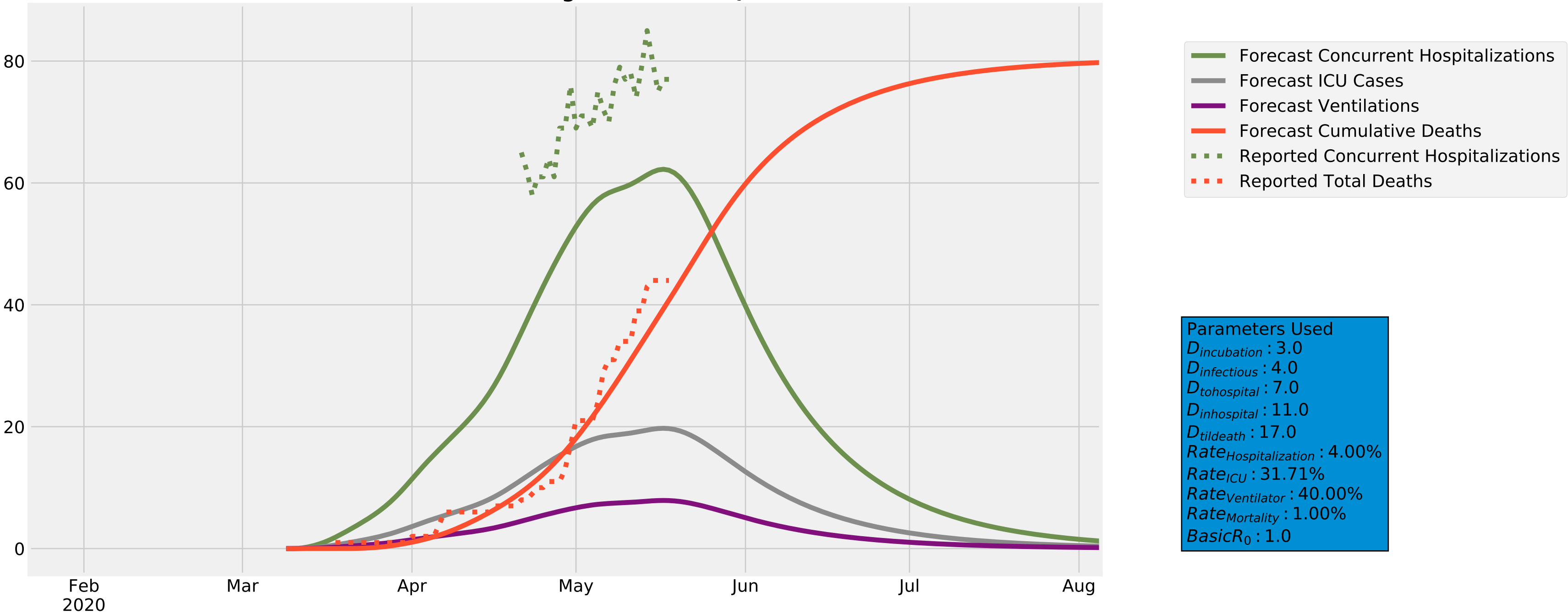
## South Dakota: No Change in Future $R_t$ Scenario



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

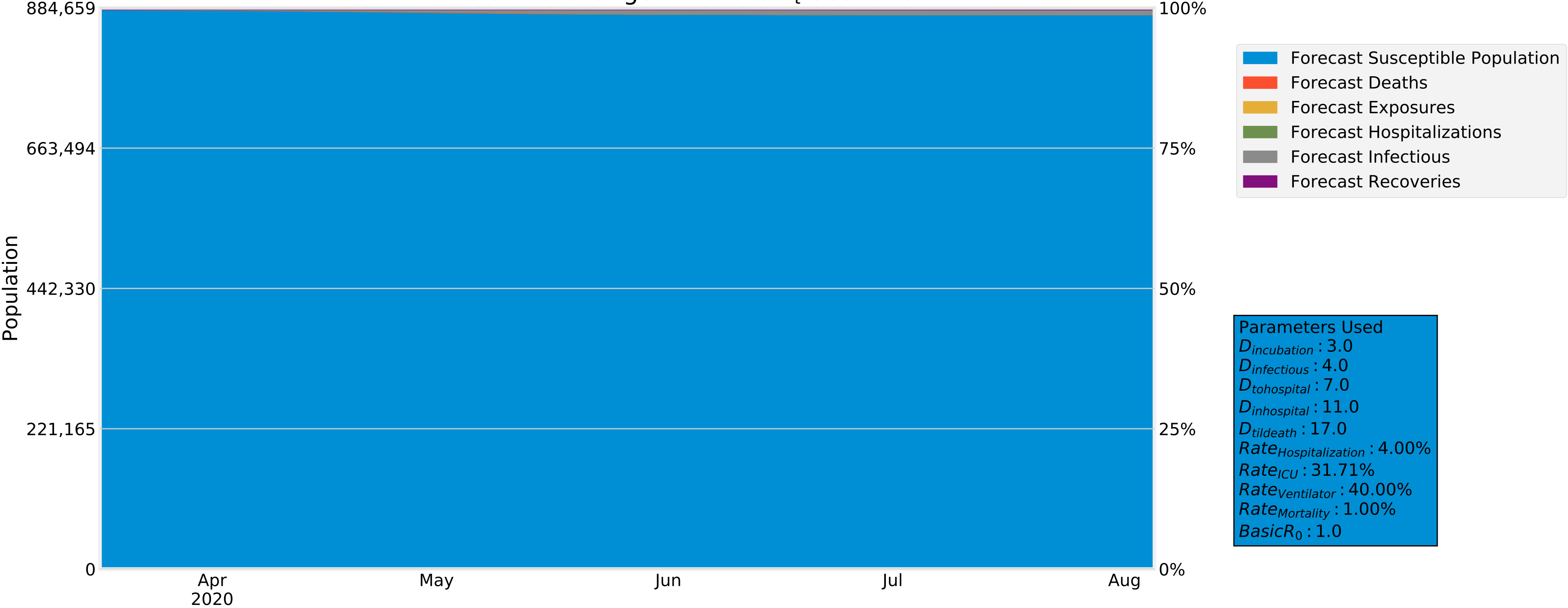
# Hospitalization and Deaths Forecast

## South Dakota: No Change in Future $R_t$ Scenario



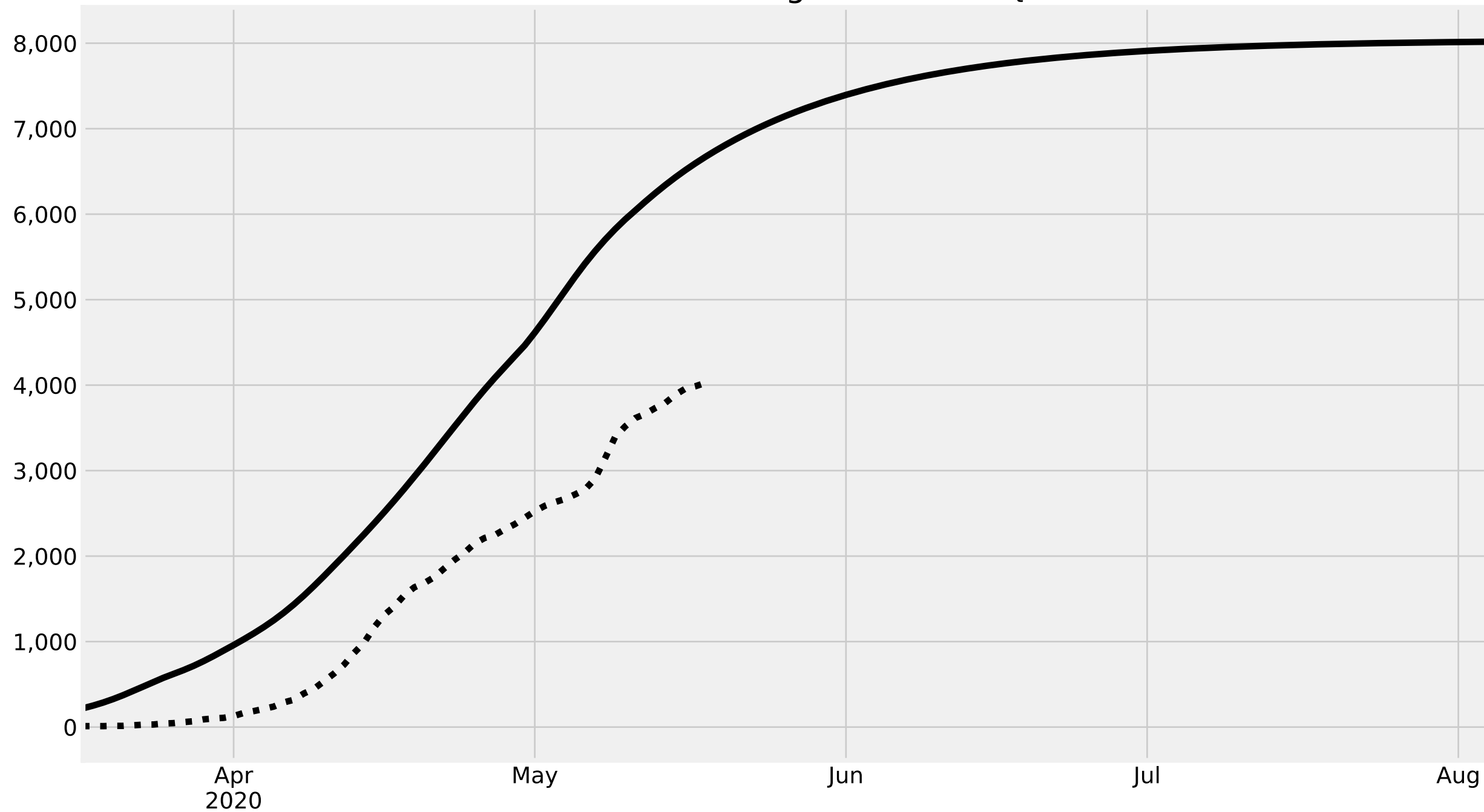
Author: Michael Donnelly (twtr: @donnellymjd)  
Chart created on 19 May 2020

Population Overview Forecast  
South Dakota: No Change in Future  $R_t$  Scenario



# Cumulative Infections Forecast

## South Dakota: No Change in Future $R_t$ Scenario

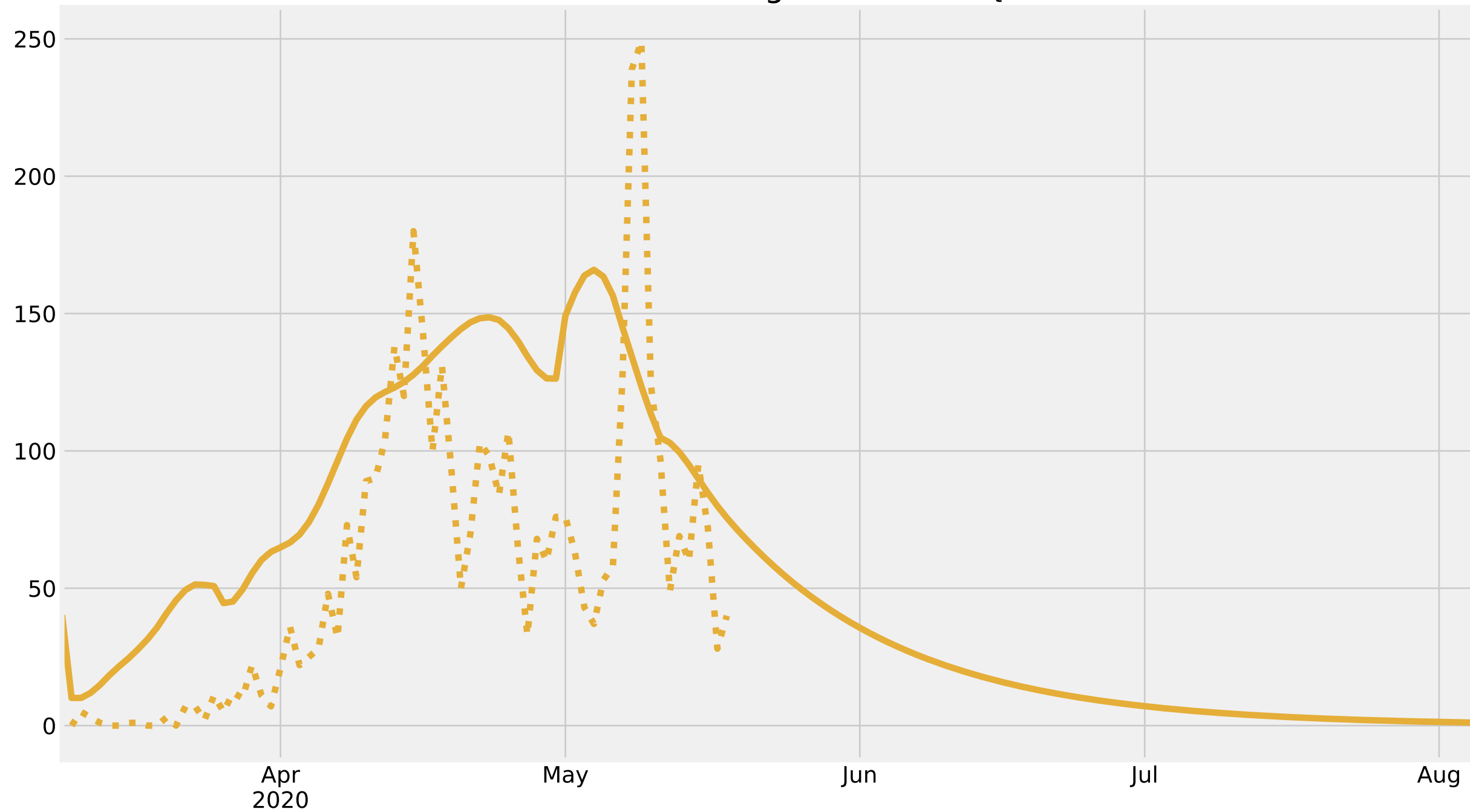


— Forecast Cumulative Infections  
... Reported Cumulative Infections

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%  
 $BasicR_0$  : 1.0

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

# Daily Exposures Forecast South Dakota: No Change in Future $R_t$ Scenario



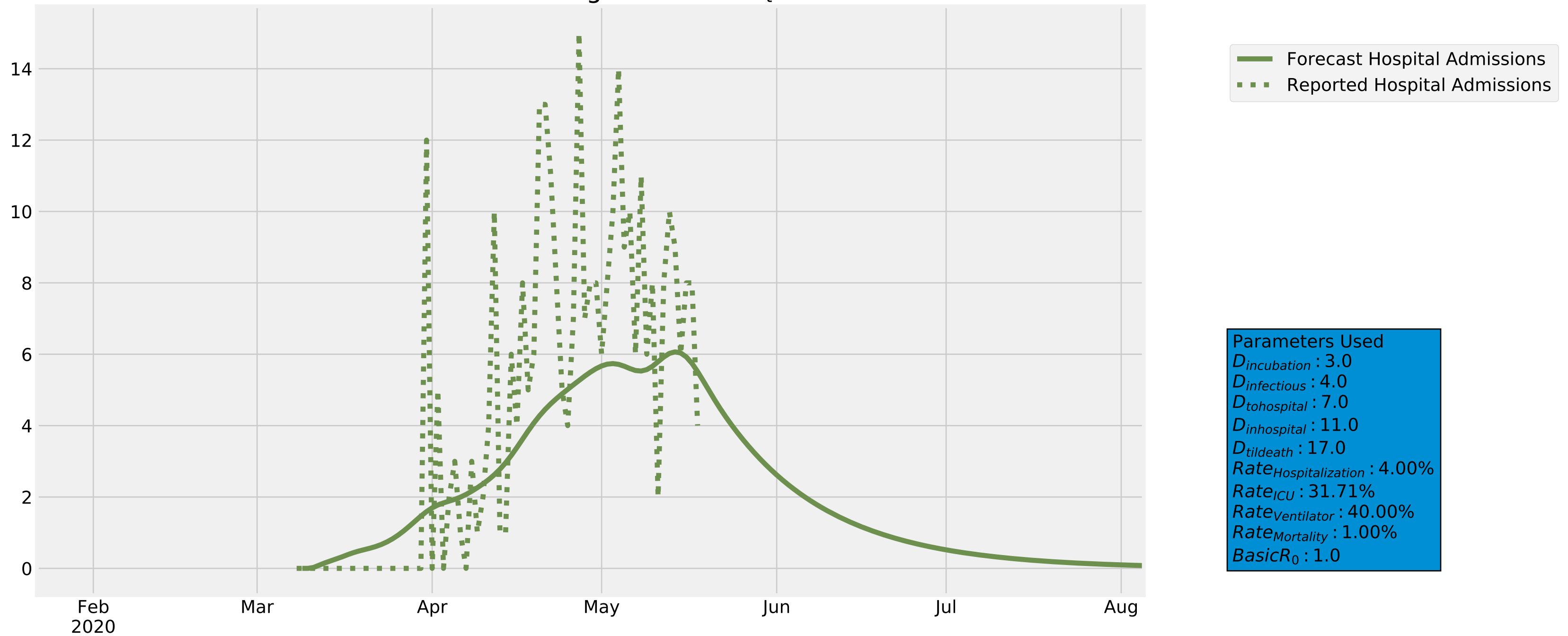
Forecast Daily New Infections (Exposed)  
Reported Daily New Infections (Exposed)

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%  
 $BasicR_0$  : 1.0

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

# Daily Hospital Admissions Forecast

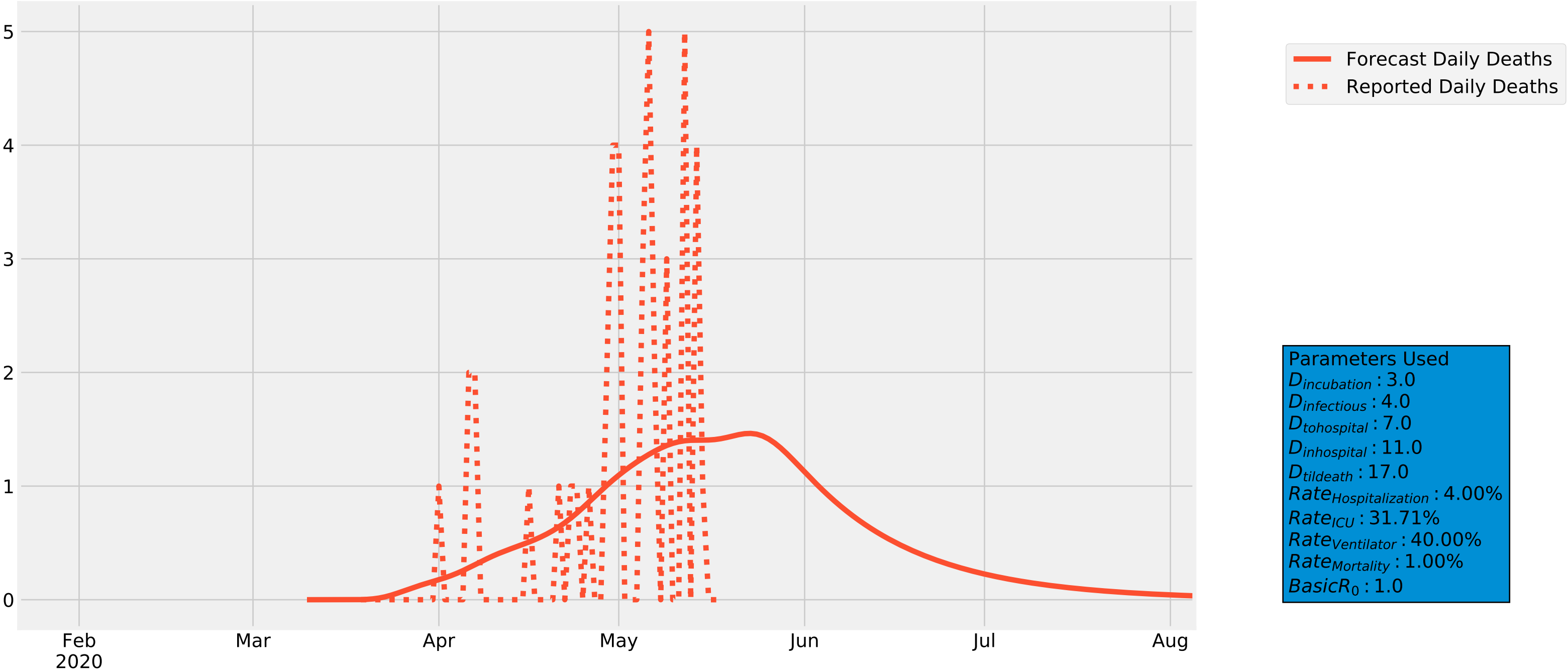
## South Dakota: No Change in Future $R_t$ Scenario



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

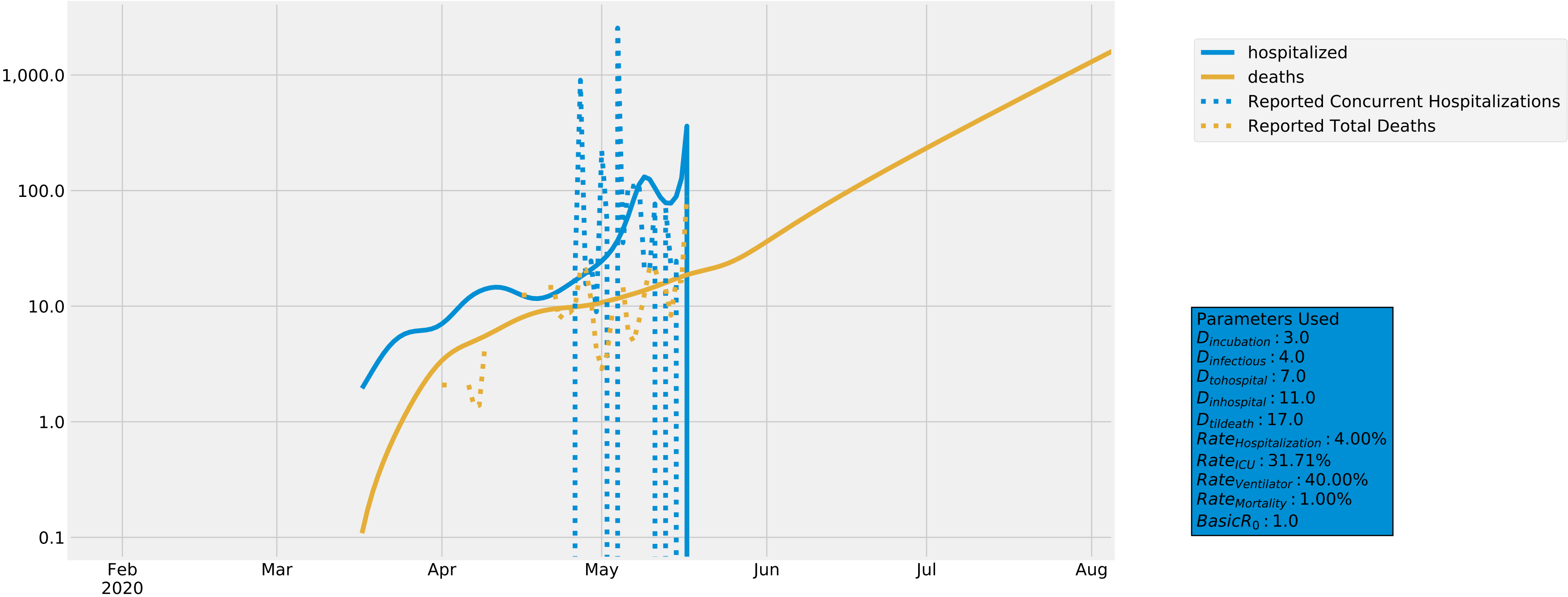


Daily Deaths Forecast  
South Dakota: No Change in Future  $R_t$  Scenario



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

Doubling Rate Forecast  
South Dakota: No Change in Future  $R_t$  Scenario



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