

# A simple *Science* Template

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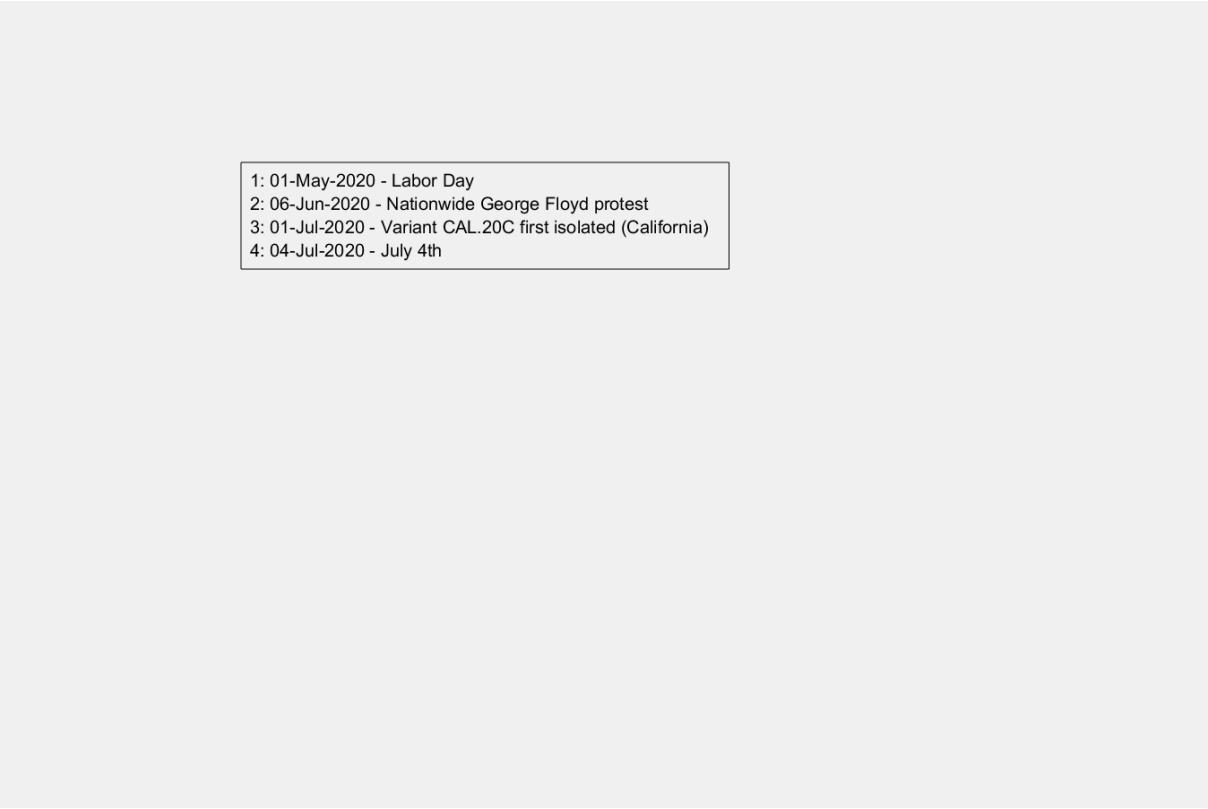
## Abstract

\*\* Things to be edited: Remove any language associating a country's ownership of a variant. It comes off as accusatory. Change Dade figures to Miami-Dade and change South Africa to B.1.351 Maybe save any conclusive commentary for the conclusion. Leave the paragraphs after each section as pure 'results' analysis Holiday/Fatalities missing dallas and houston

Introduction. Explain why the study was necessary and explain what we looked at.

## 1 CAL.20C and Nearby Significant Events

### 1.1 Florida



1: 01-May-2020 - Labor Day  
2: 06-Jun-2020 - Nationwide George Floyd protest  
3: 01-Jul-2020 - Variant CAL.20C first isolated (California)  
4: 04-Jul-2020 - July 4th

Figure 1

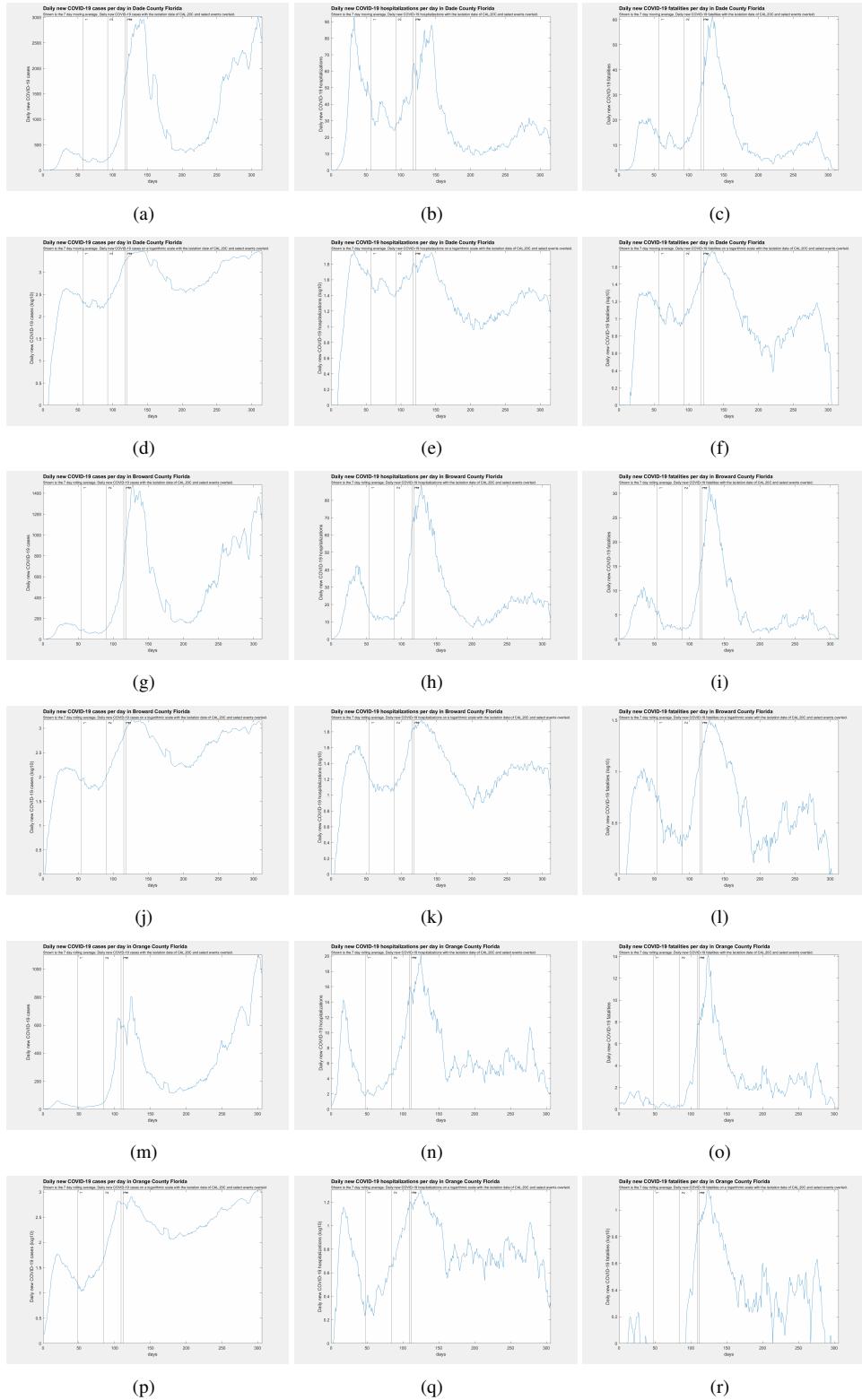


Figure 2: (a-f) Dade County; (g-l) Broward County; (m-r) Orange County

## 1.2 California

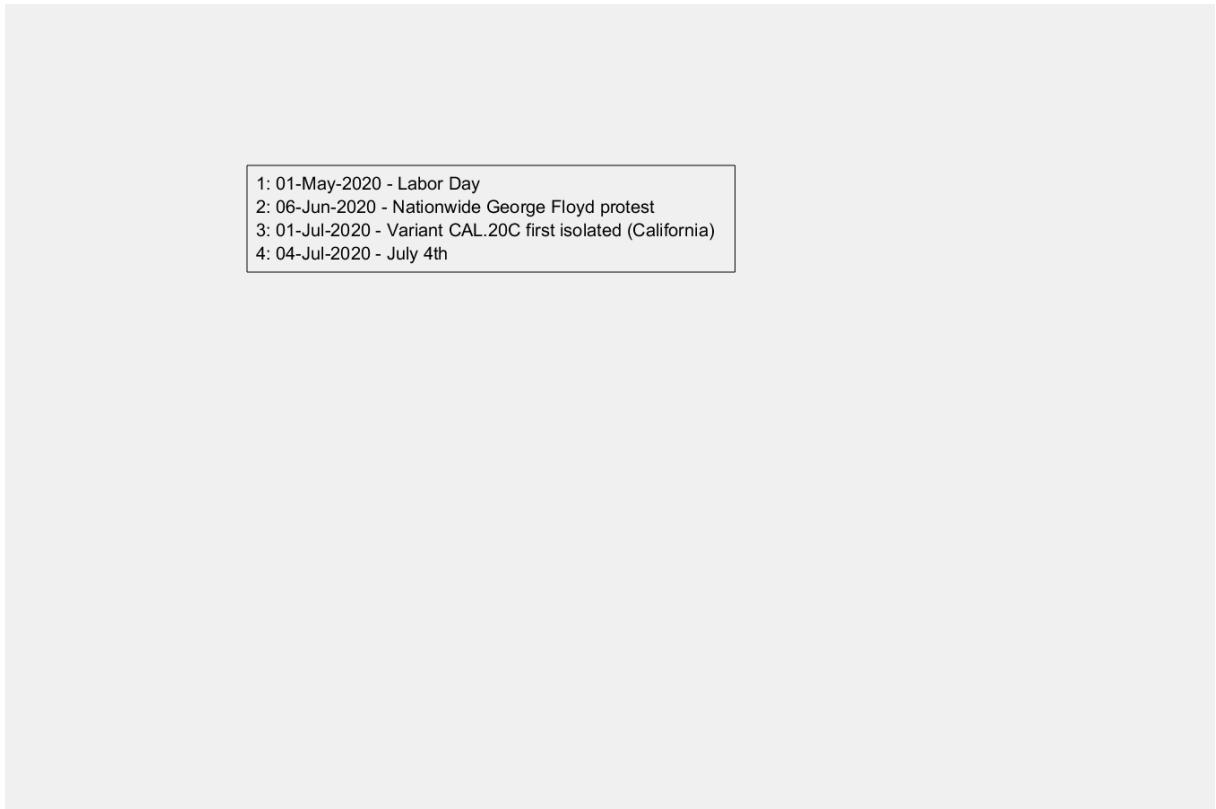


Figure 3

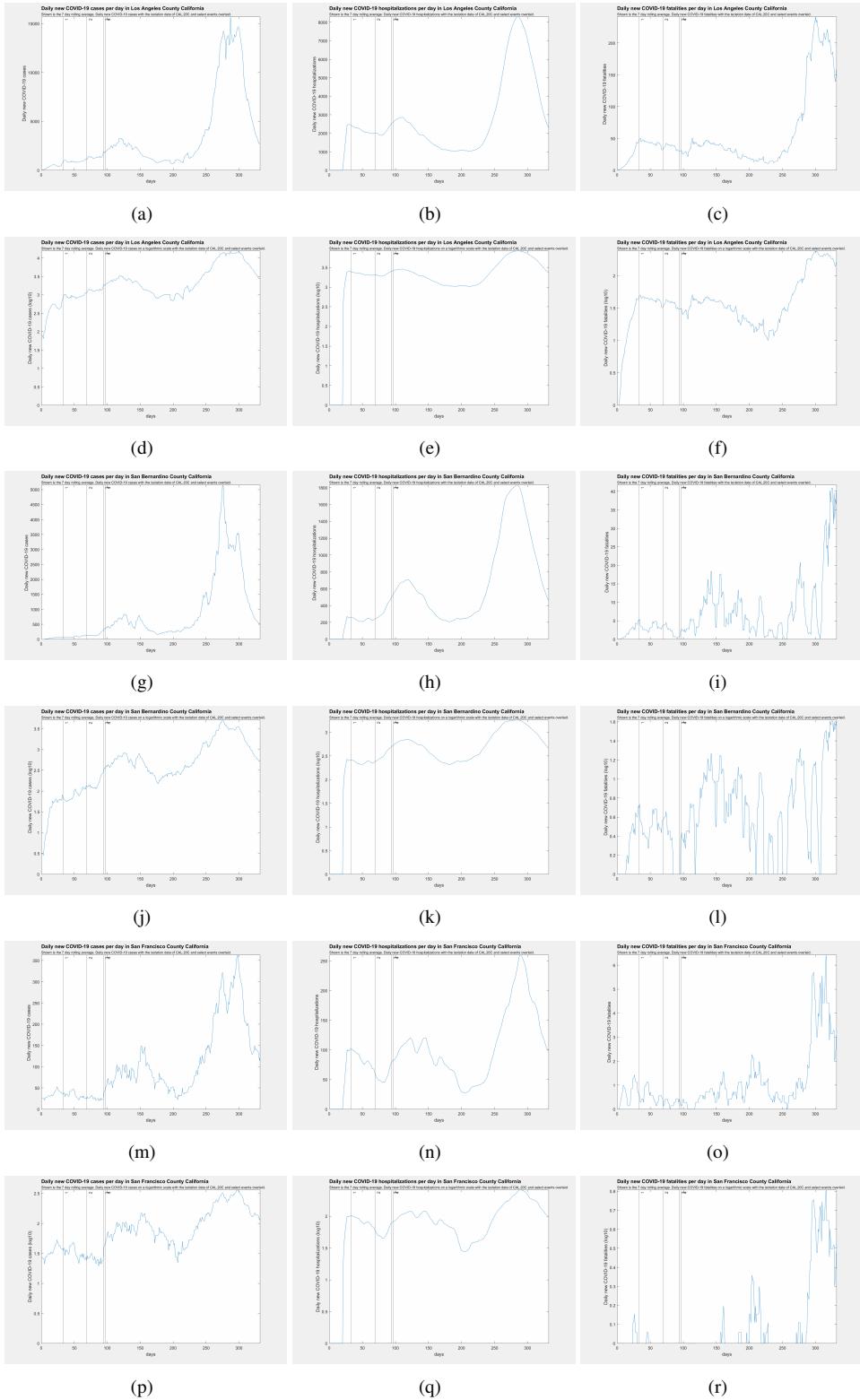


Figure 4: (a-f) Los Angeles County; (g-l) San Bernardino County; (m-r) San Francisco County

### 1.3 Texas



Figure 5

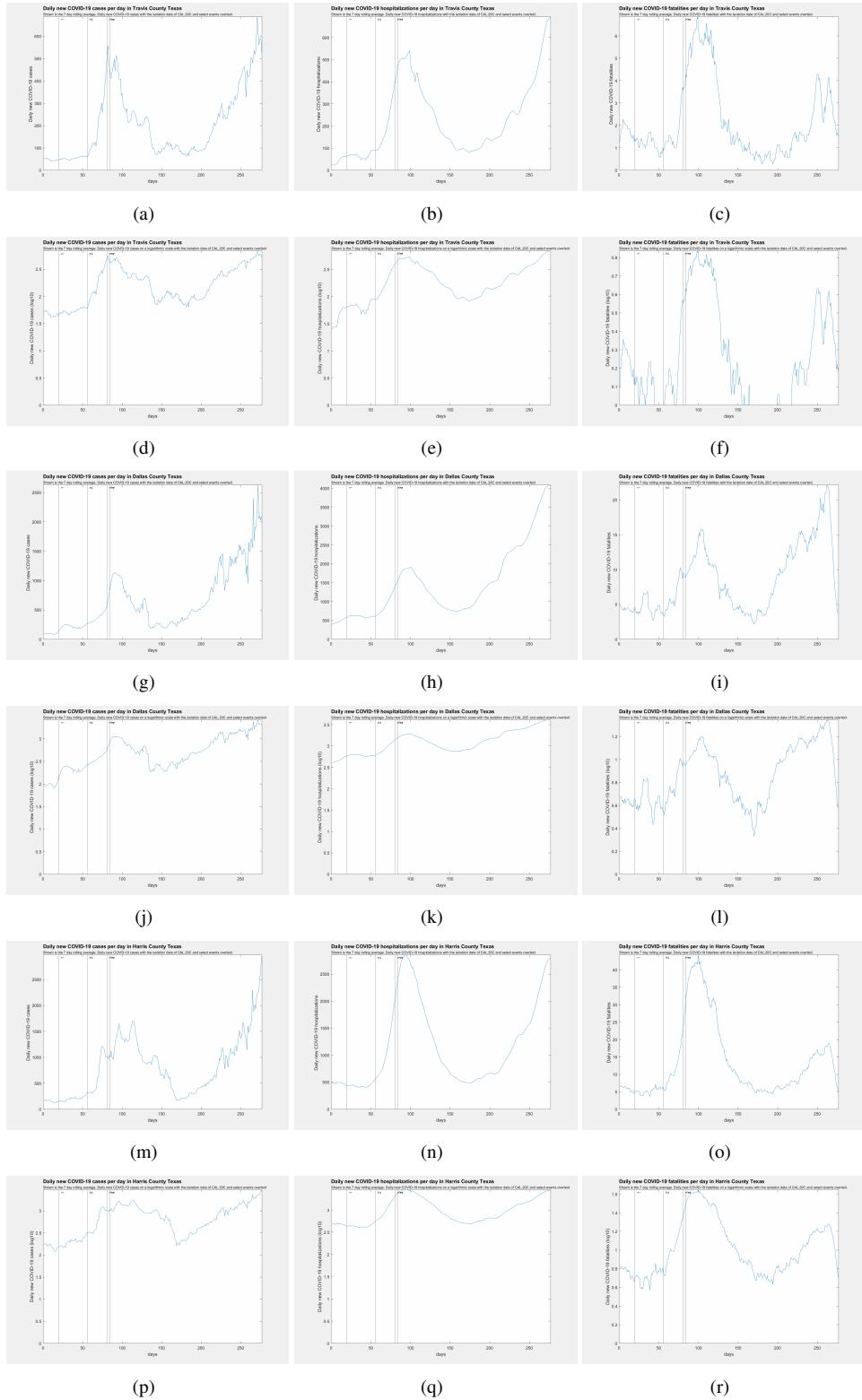


Figure 6: (a-f) Travis County; (g-l) Dallas County; (m-r) Harris County

## **2 B.1.1.7 and Nearby Significant Events**

### **2.1 Florida**



Figure 7

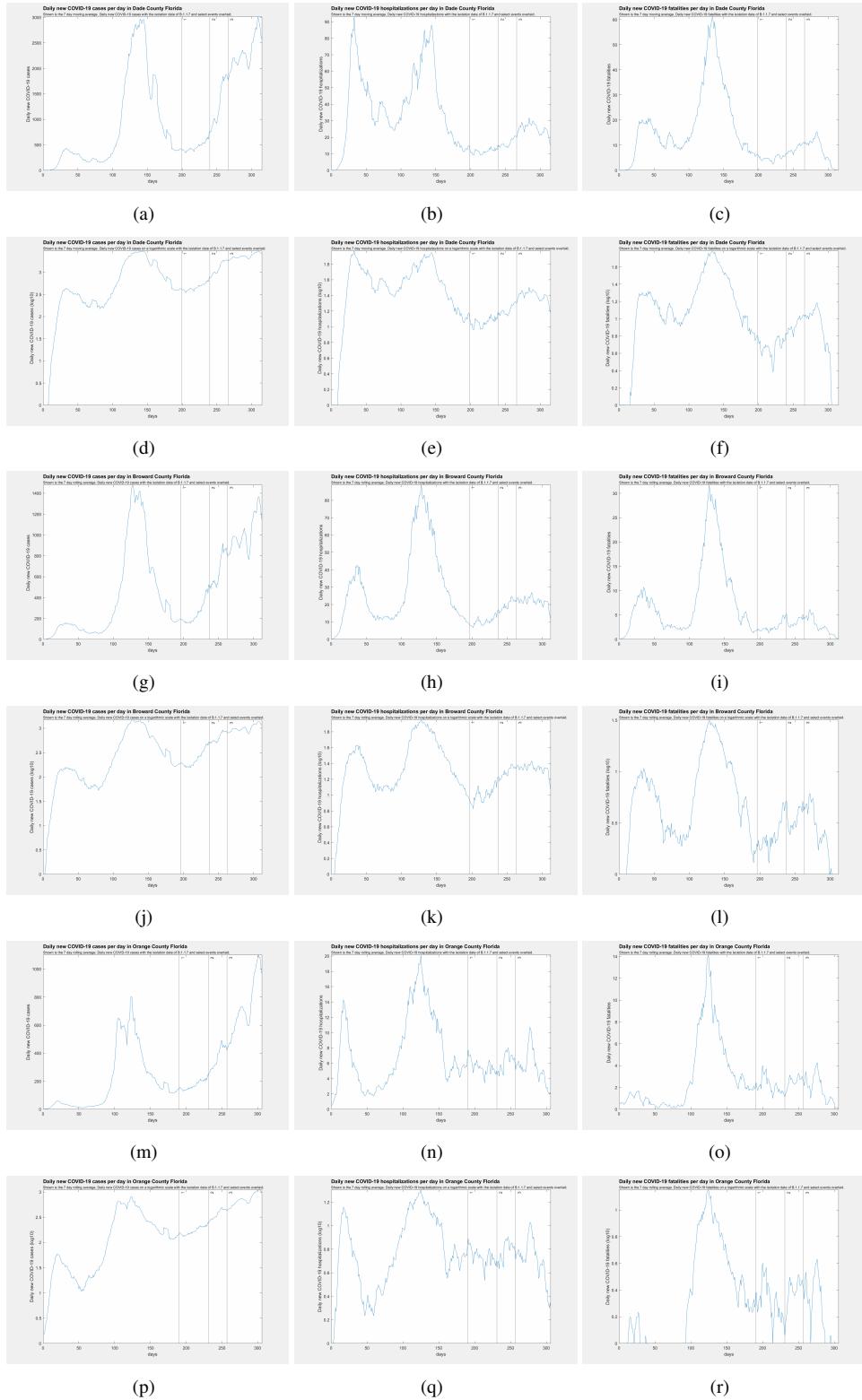


Figure 8: (a-f) Dade County; (g-l) Broward County; (m-r) Orange County

## 2.2 California

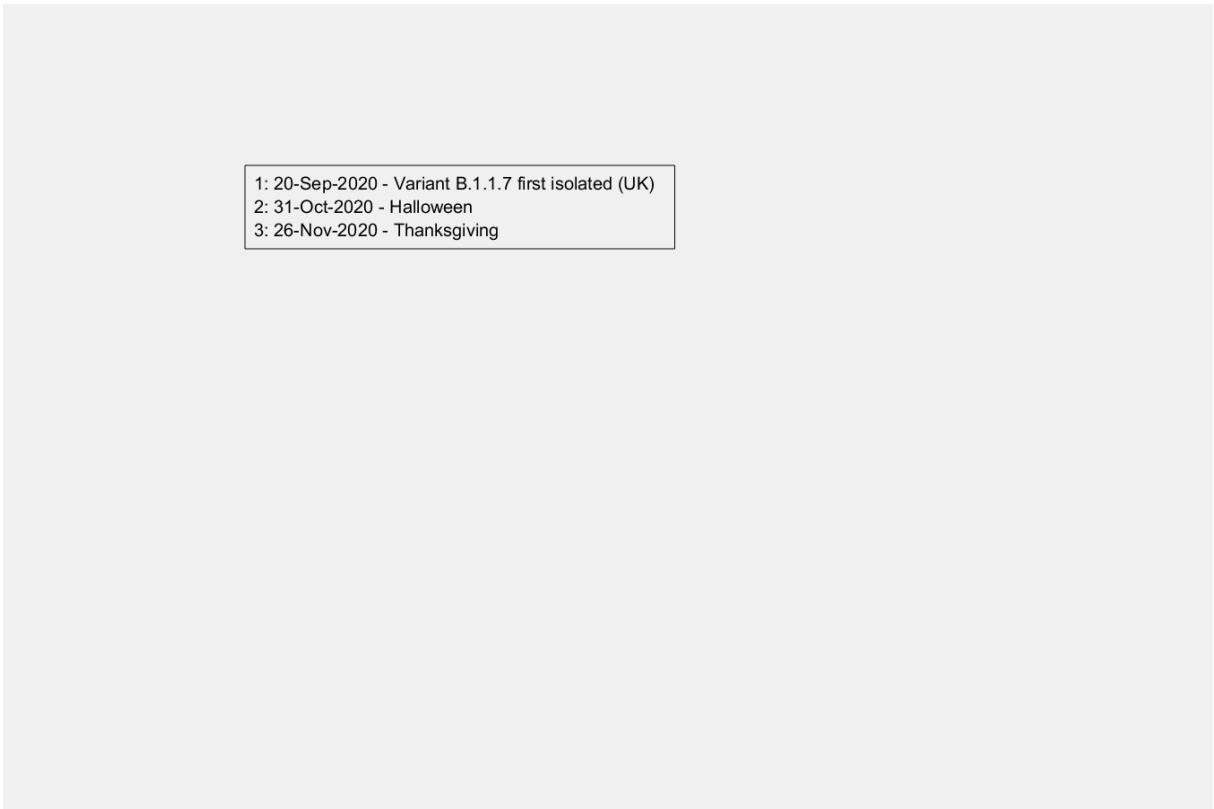


Figure 9



Figure 10: (a-f) Los Angeles County; (g-l) San Bernardino County; (m-r) San Francisco County

## 2.3 Texas



Figure 11

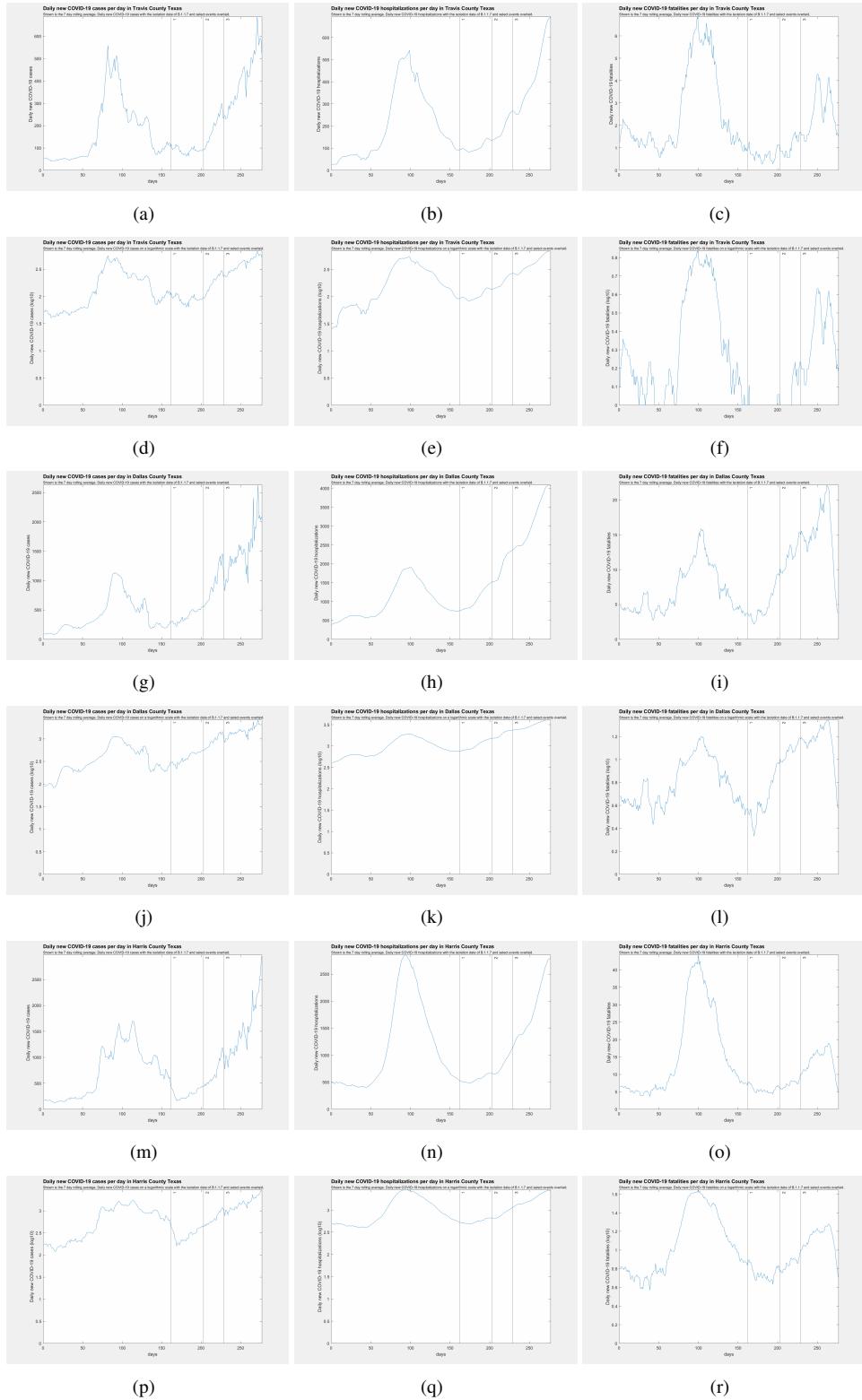


Figure 12: (a-f) Travis County; (g-l) Dallas County; (m-r) Harris County

### **3 COVID-19 Vaccine Rollout and Administration**

#### **3.1 Florida**



Figure 13

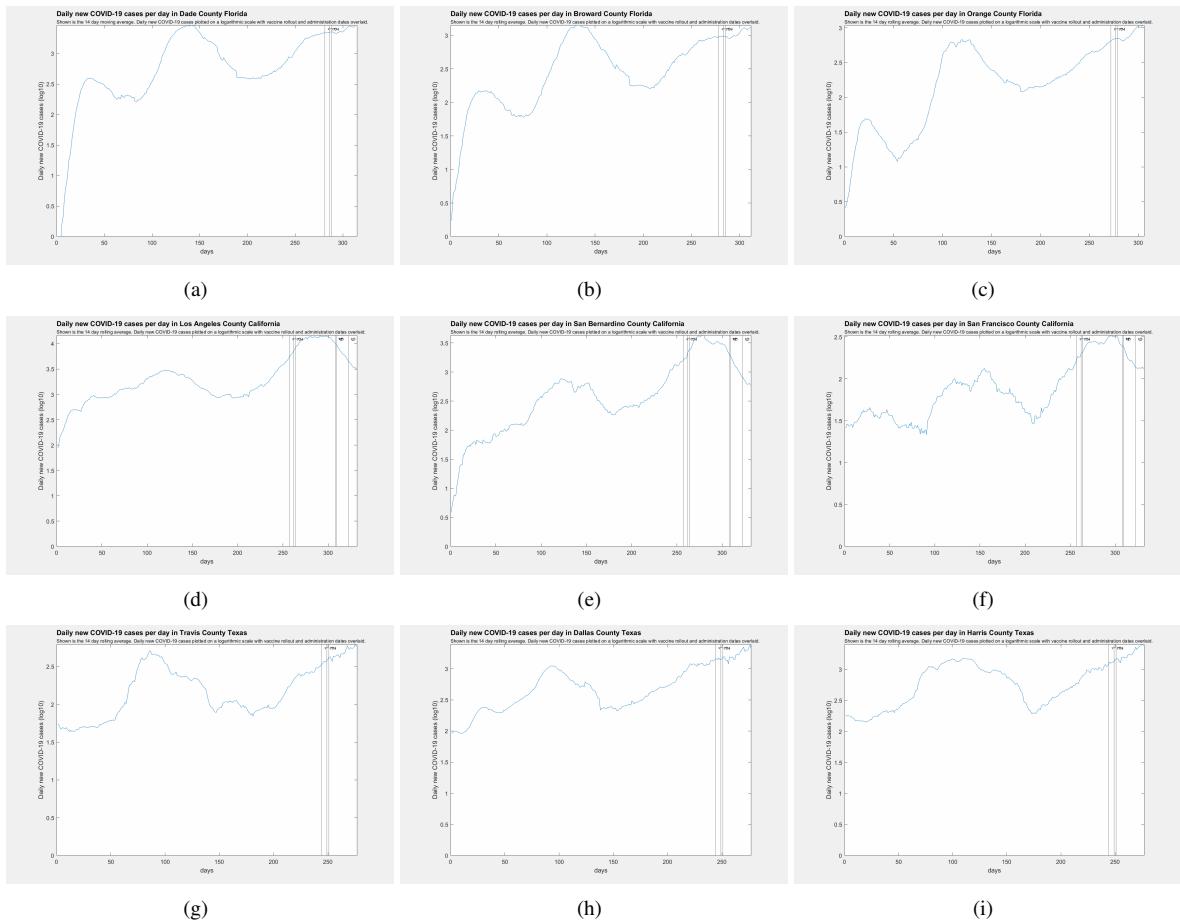


Figure 14: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

### **3.2 Vaccine Rollout, Administration and Hospitalizations**



Figure 15

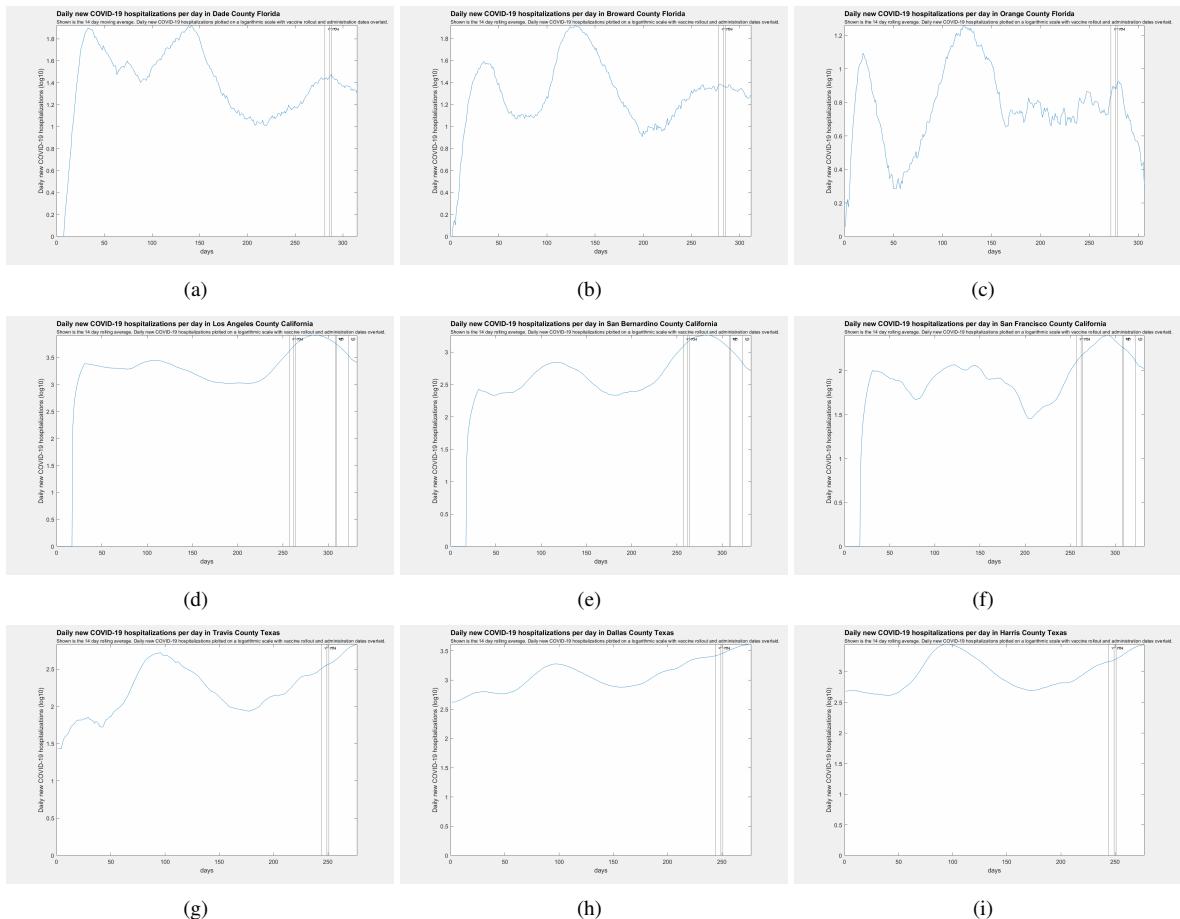


Figure 16: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

### 3.3 Vaccine Rollout, Administration and Fatalities



Figure 17

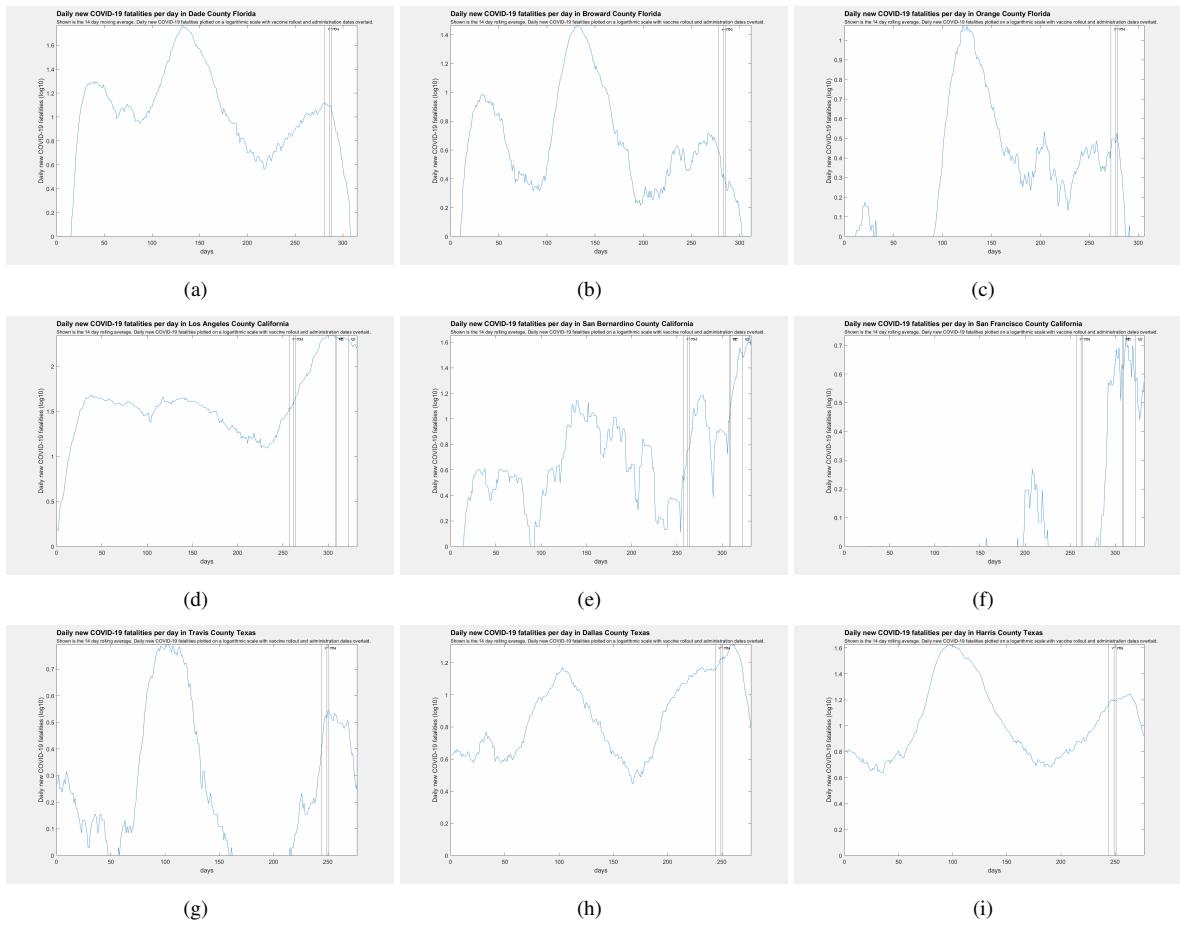


Figure 18: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

### **3.4 Discussion of vaccine rollout and administration**

## **4 George Floyd, Black Lives Matter, National Unrest**

### **4.1 Black Lives Matter Events and COVID-19 Cases**

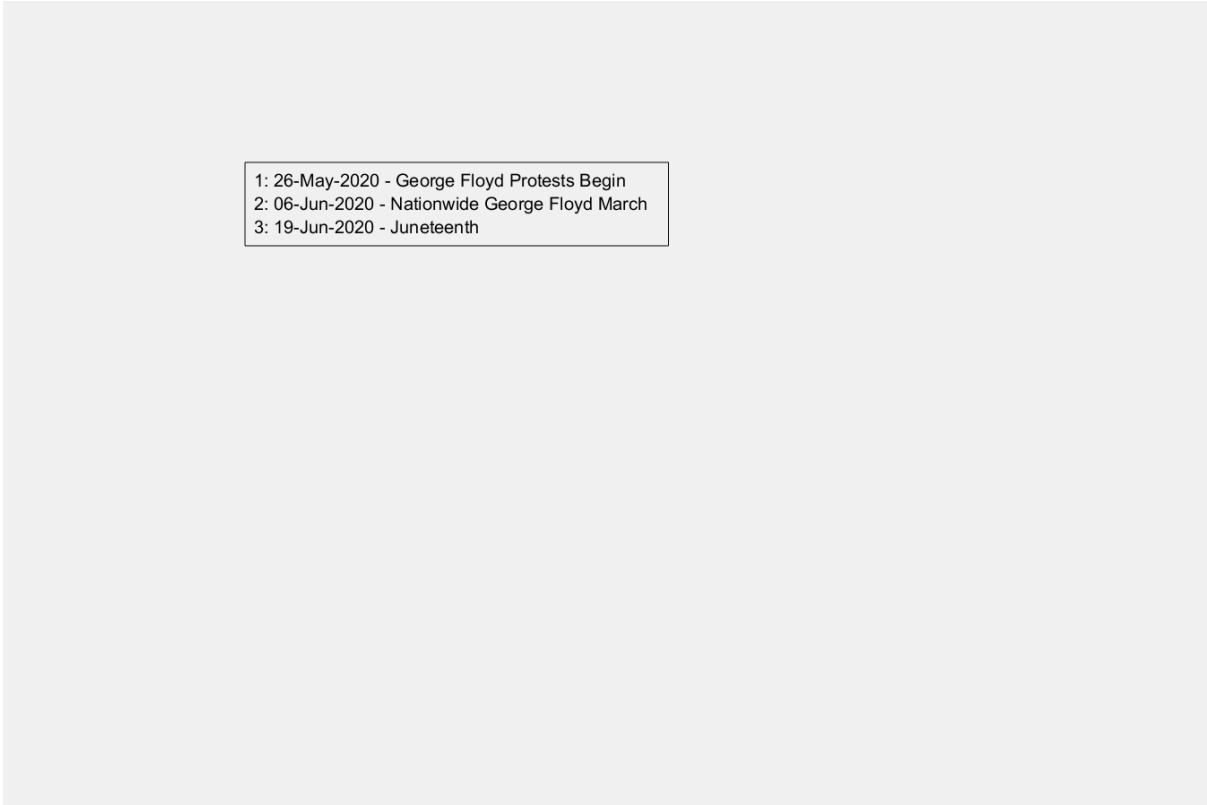


Figure 19

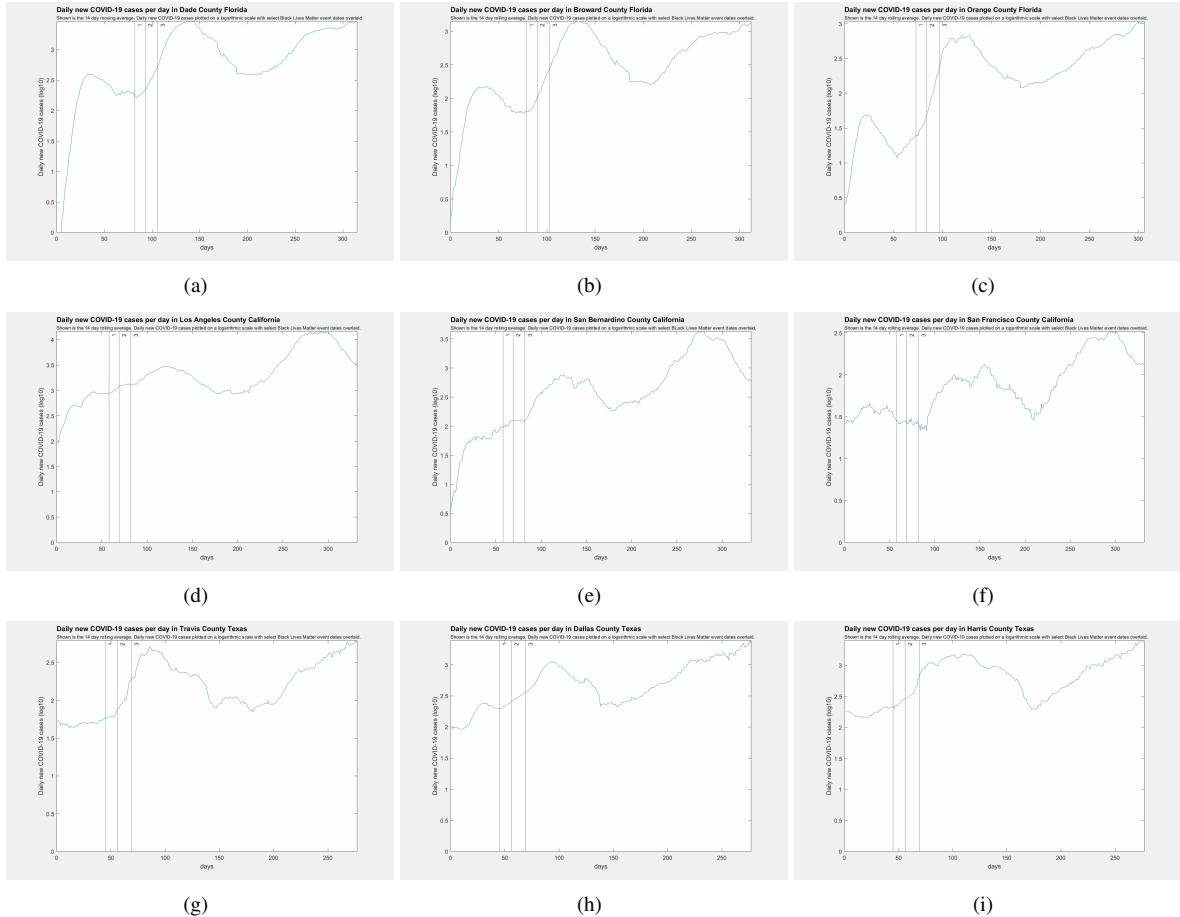


Figure 20: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

## 4.2 Black Lives Matter Events and COVID-19 Hospitalizations

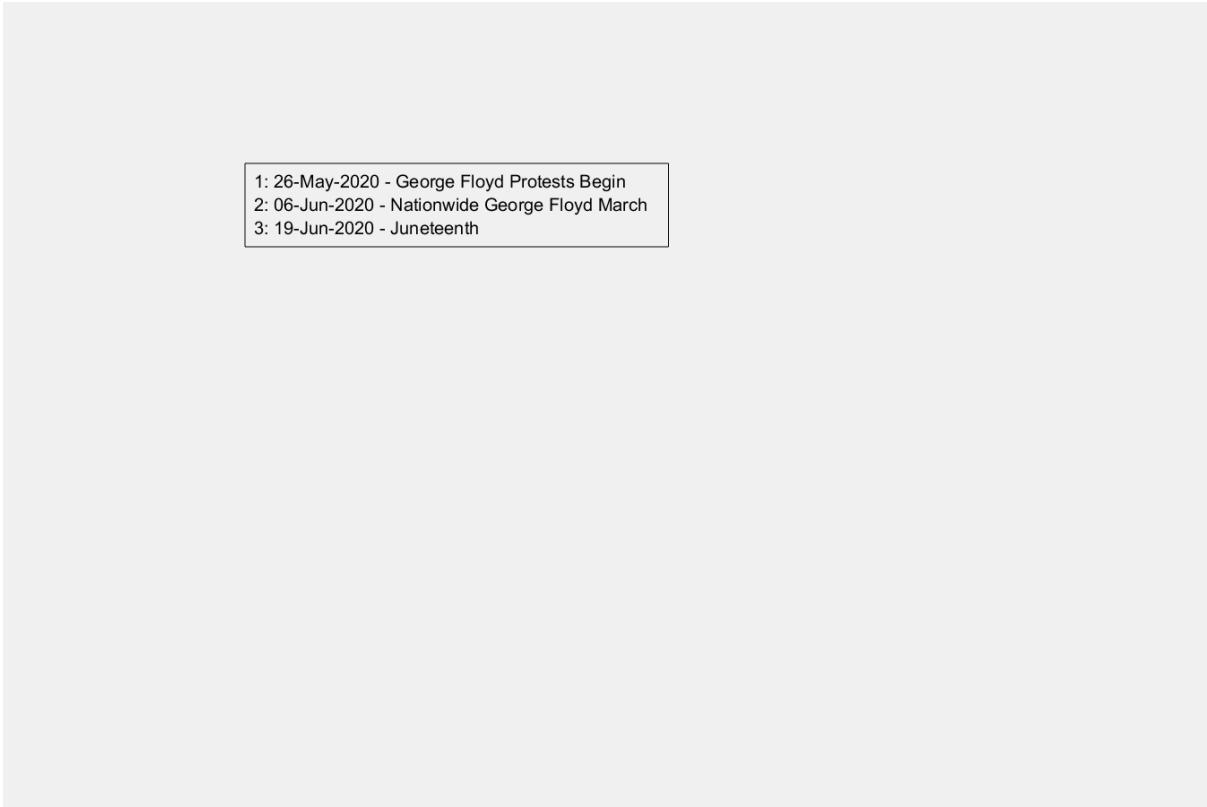


Figure 21

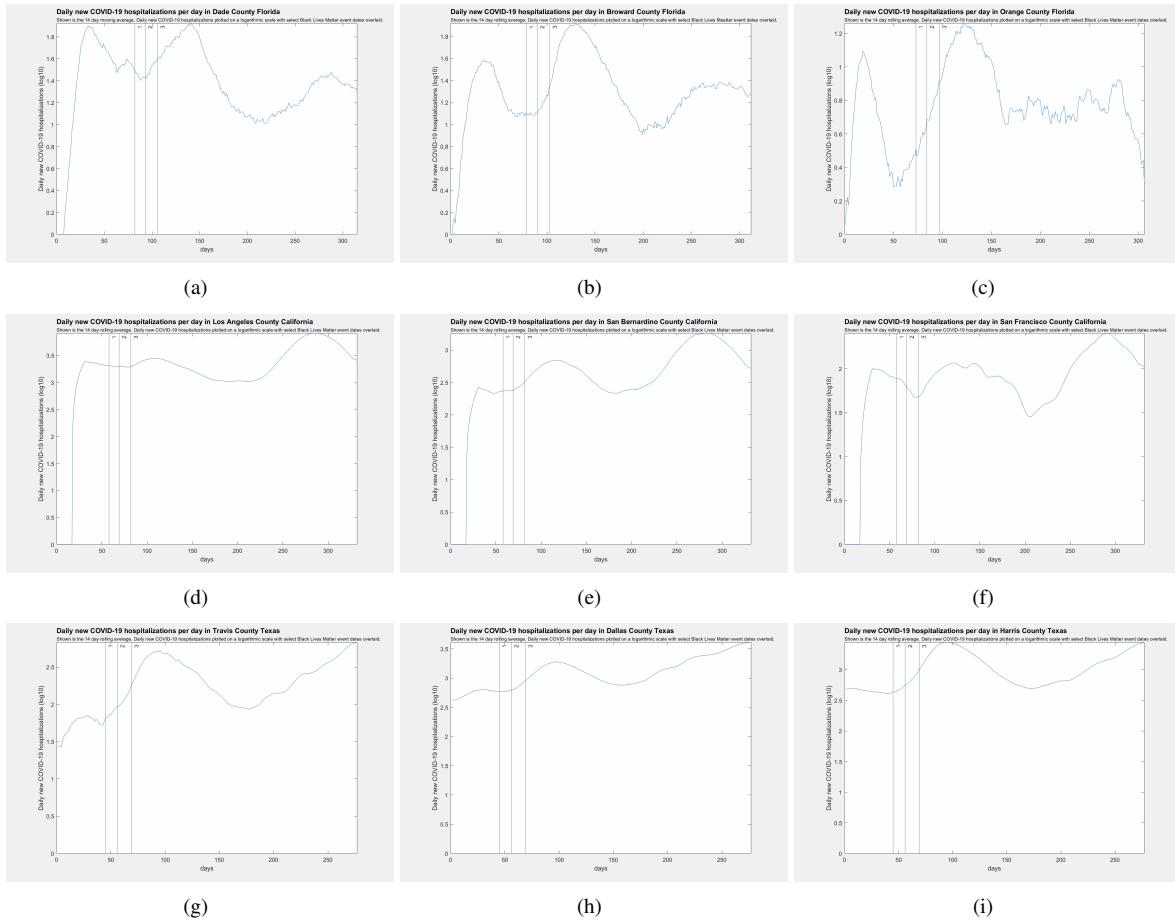


Figure 22: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

#### **4.3 Black Lives Matter Events and COVID-19 Fatalities**

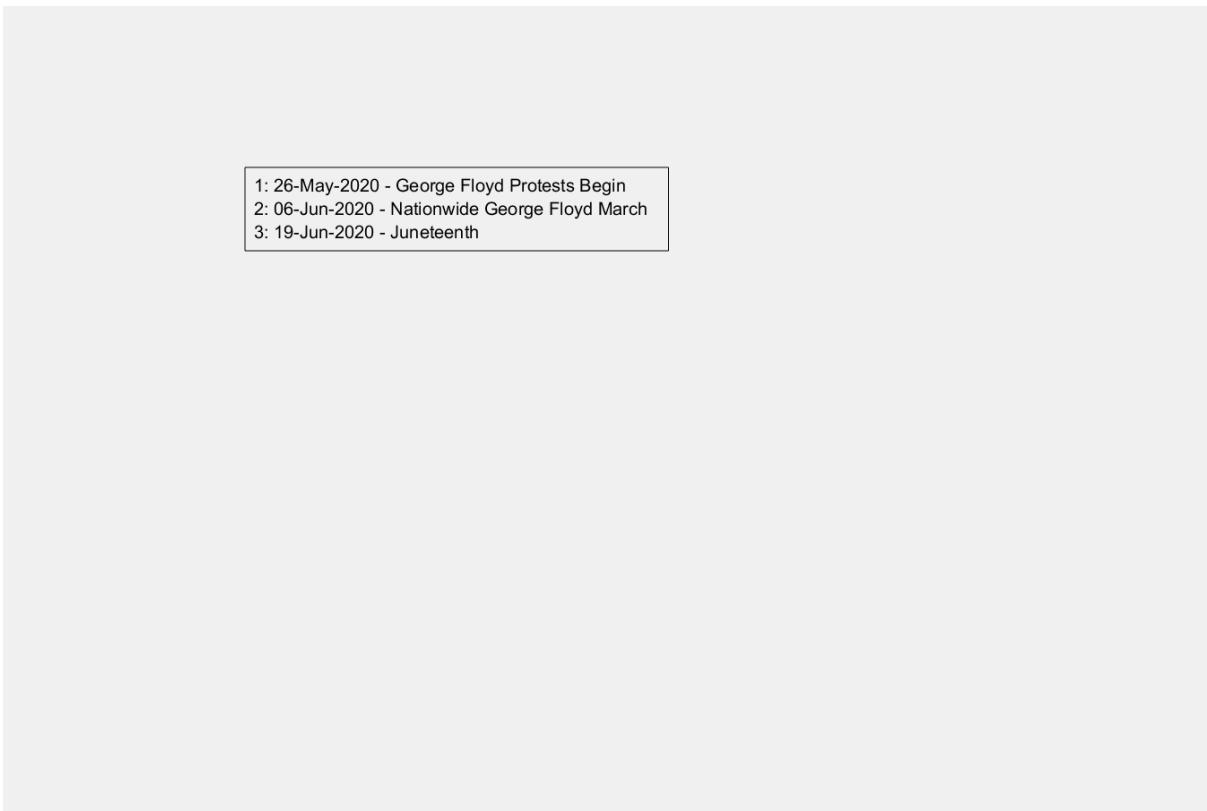


Figure 23

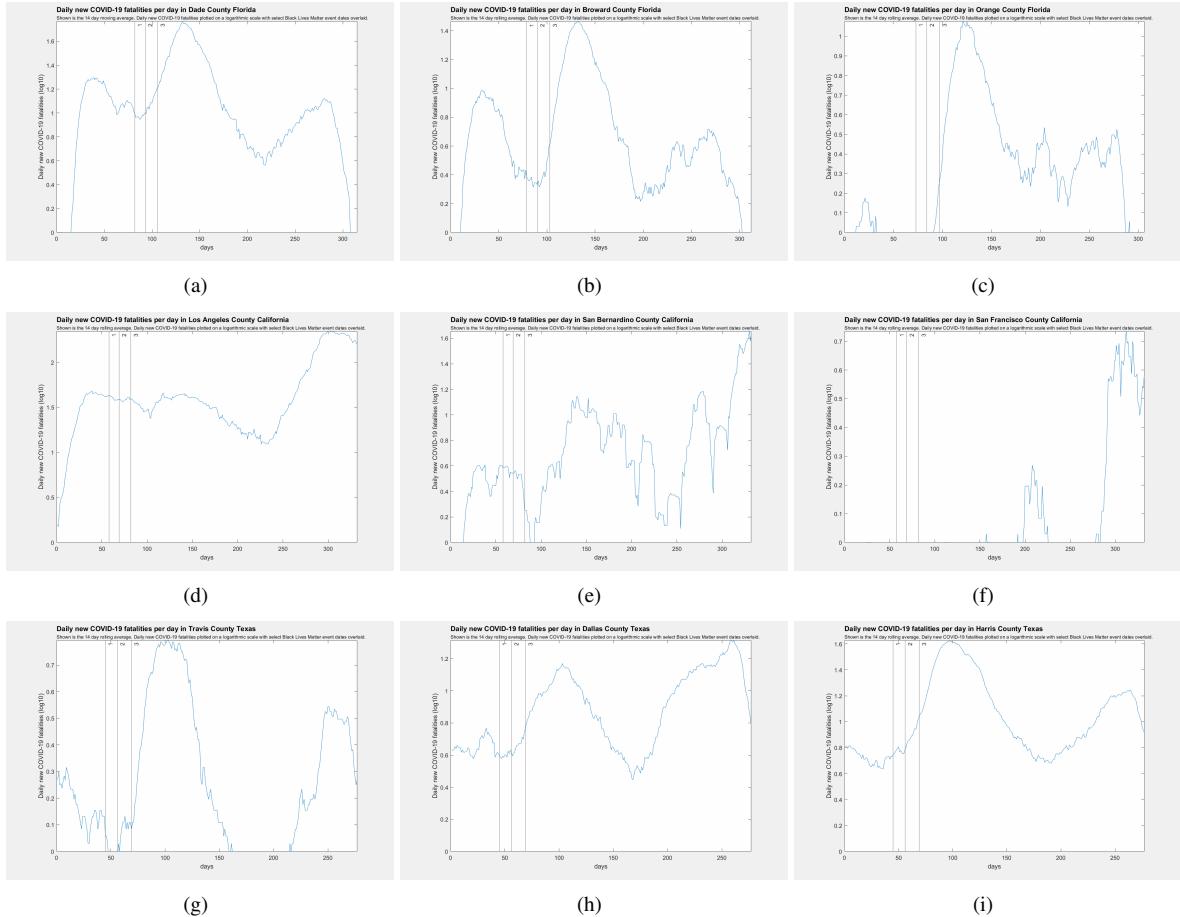


Figure 24: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

#### 4.4 Black Lives Matter and COVID-19

## 5 The Impact of Virulent COVID-19 Variant Strains

In figures 2-6, the 14 day moving average of daily new COVID-19 cases, hospitalizations, and fatalities per day in 9 counties are displayed on a logarithmic scale ( $\log_{10}$ ) with vertical line overlays representing the dates when five sophisticated COVID-19 variant strains were first detected in their respective population. The counties assessed are Miami-Dade County, Florida; Broward County, Florida; Orange County, Florida; Los Angeles County, California; San Bernardino County, California; San Francisco County, California; Travis County, Texas; Dallas County, Texas; and Harris County, Texas. The genomic isolation dates of the COVID-19 variant strains in figures 2-10 are belonging to: CAL.20C (of lineage B.1.429), first isolated in California; B.1.1.207, first isolated in Nigeria; B.1.1.7 (aka VOC-202012/01, and as lineage B.1.1.7, or 20I/501Y.V1), first isolated in the United Kingdom; B.1.351 (aka 20H/501Y.V2, formerly known as 20C/501Y.V2), first isolated in South Africa; and P.1 (of lineage B.1.1.248), first isolated in Tokyo, and colloquially referred to as the Brazilian variant.

### 5.1 COVID-19 Variants and Daily New COVID-19 Cases

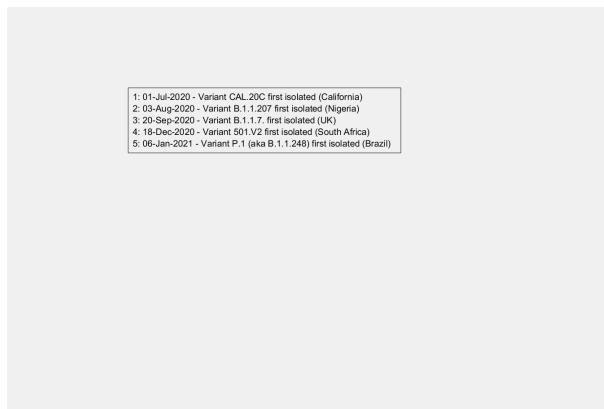


Figure 25: Listed above are five uniquely infectious variant strains of COVID-19, listed corresponding to the date in which they were first genetically sequenced and isolated in their respective region.

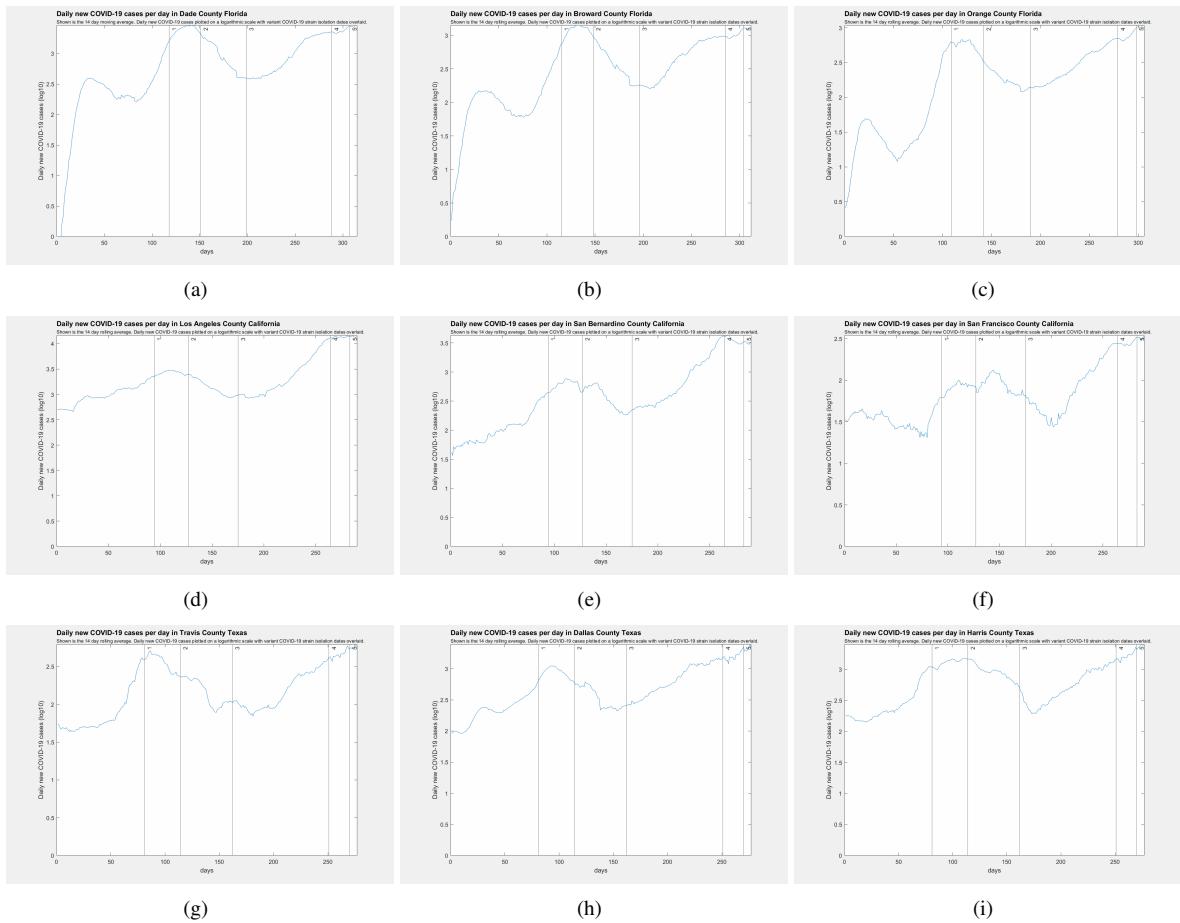


Figure 26: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

## 5.2 COVID-19 Variants and Daily New COVID-19 Hospitalizations

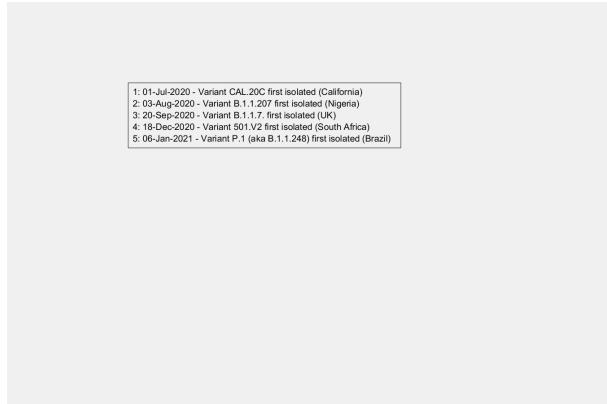


Figure 27: Listed above are five uniquely infectious variant strains of COVID-19, listed corresponding to the date in which they were first genetically sequenced and isolated in their respective region.

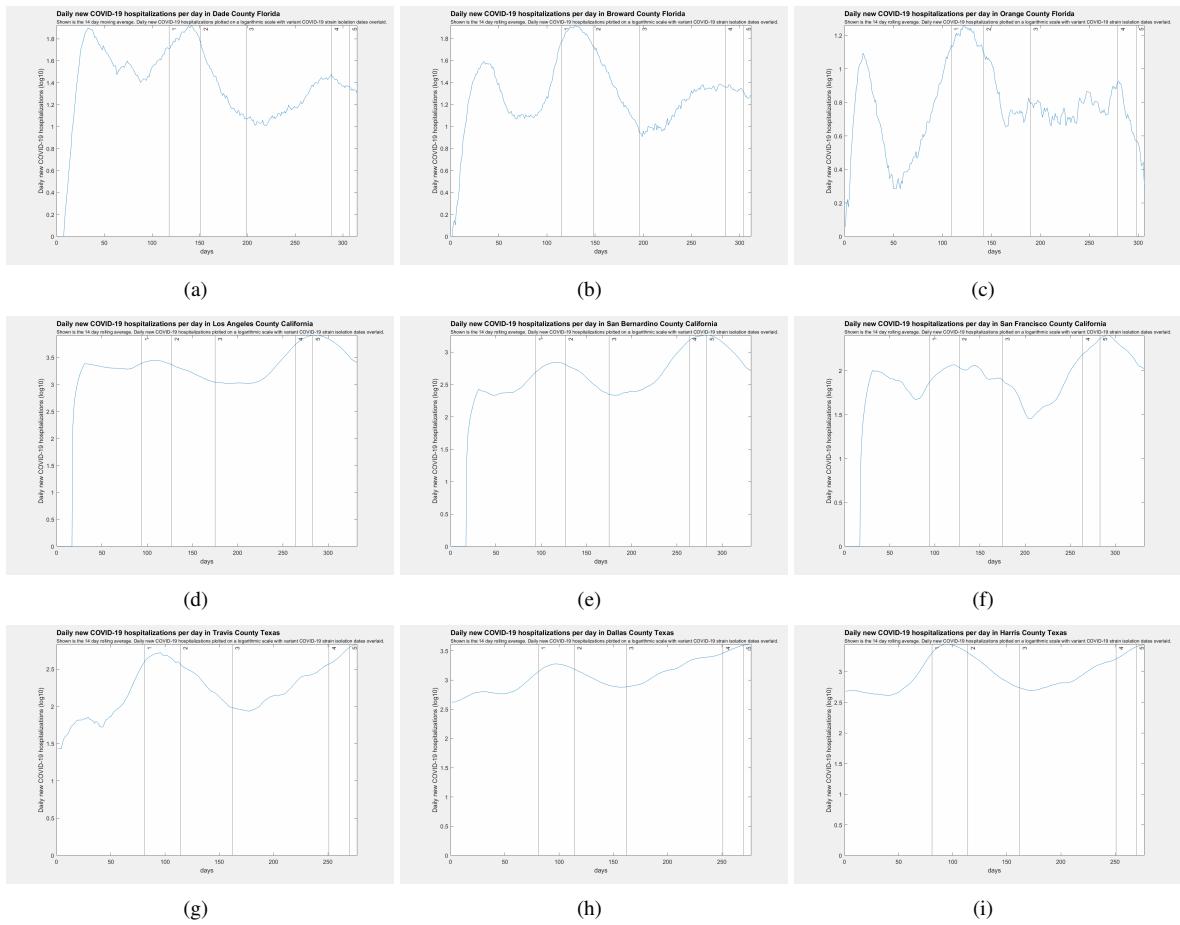


Figure 28: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

### 5.3 COVID-19 Variants and Daily New COVID-19 Fatalities

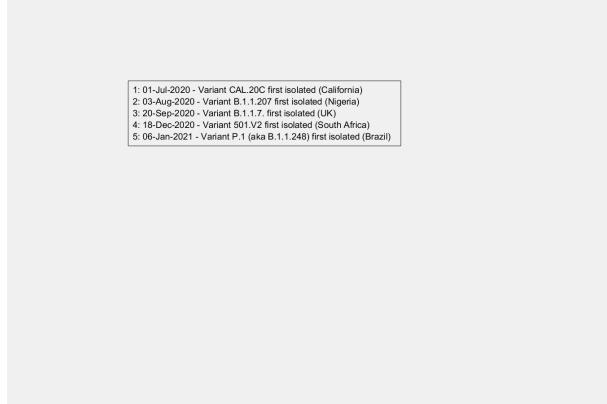


Figure 29: Listed above are five uniquely infectious variant strains of COVID-19, listed corresponding to the date in which they were first genetically sequenced and isolated in their respective region.

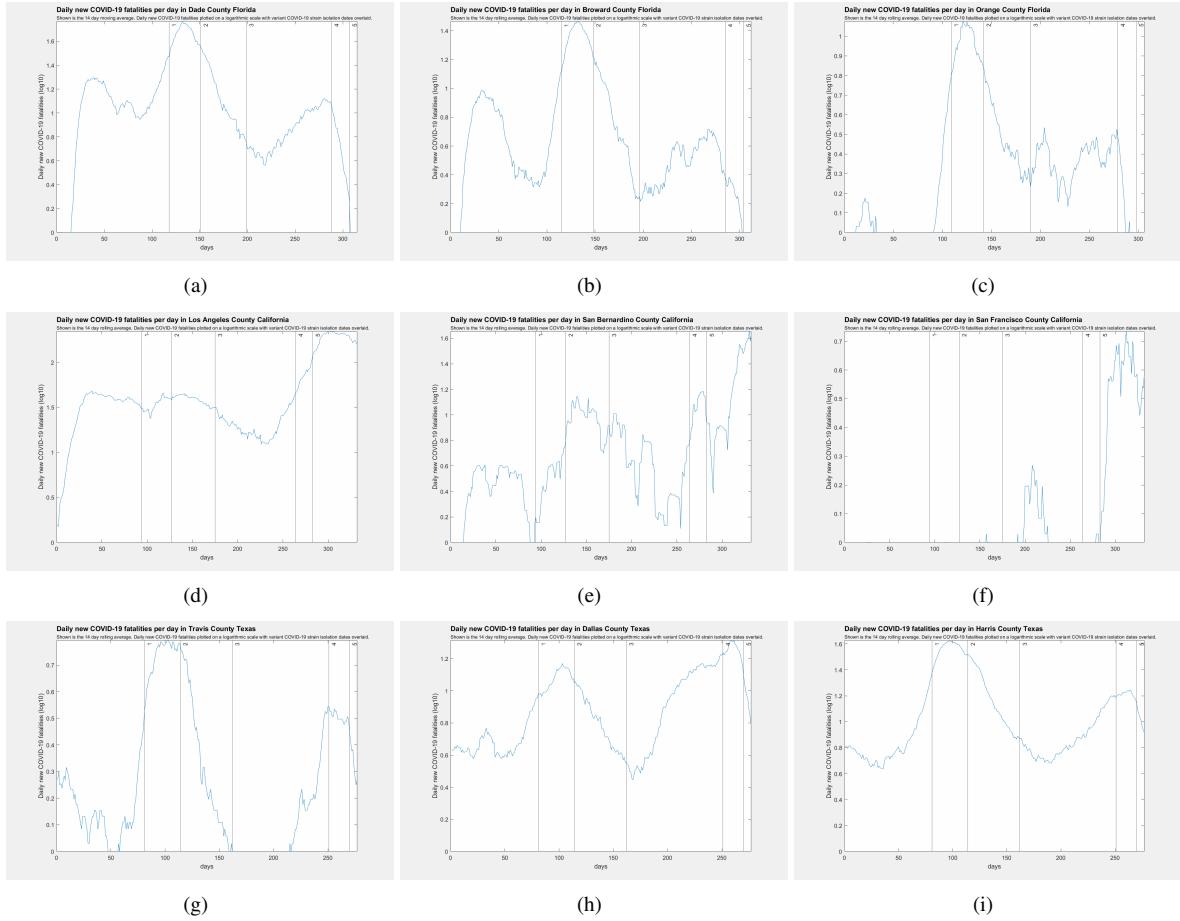


Figure 30: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

## **5.4 County-Level Statistics on COVID-19 Variant Strains**

### **5.5 The CAL.20C Variant**

### **5.6 How CAL.20C Dominated**

## **6 The Impact of National Holidays**

In figures X-X, the 14 day moving average of daily new COVID-19 cases, hospitalizations and fatalities per day in 9 counties is displayed on a logarithmic scale ( $\log_{10}$ ) with vertical line overlays representing the dates of several national and seasonal holidays have occurred. The counties assessed are Miami-Dade County, Florida; Broward County, Florida; Orange County, Florida; Los Angeles County, California; San Bernardino County, California; San Francisco County, California; Travis County, Texas; Dallas County, Texas; and Harris County, Texas.

### **6.1 Holidays and Daily New COVID-19 Cases**



Figure 31

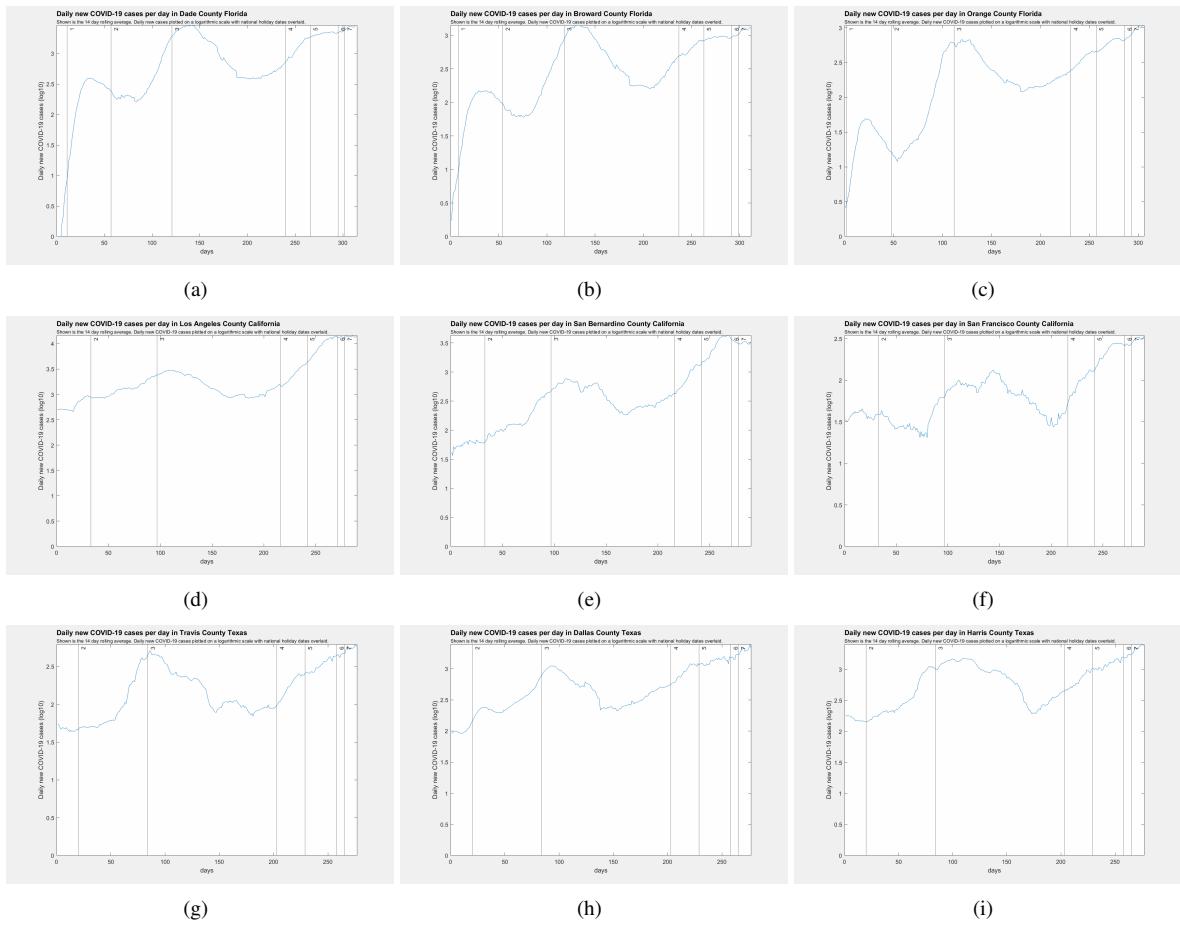


Figure 32: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

## 6.2 Holidays and Daily New COVID-19 Hospitalizations



Figure 33

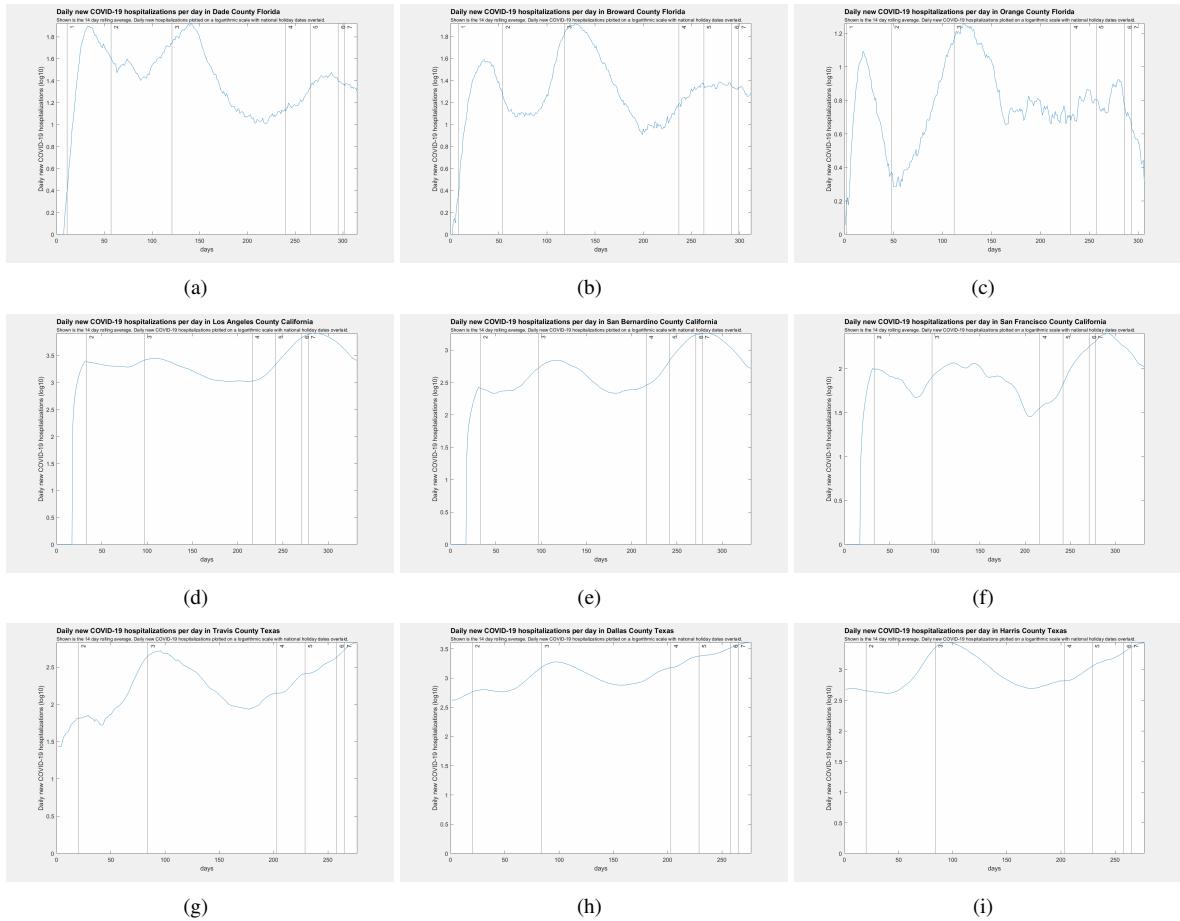


Figure 34: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

### 6.3 Holidays and Daily New COVID-19 Fatalities



Figure 35

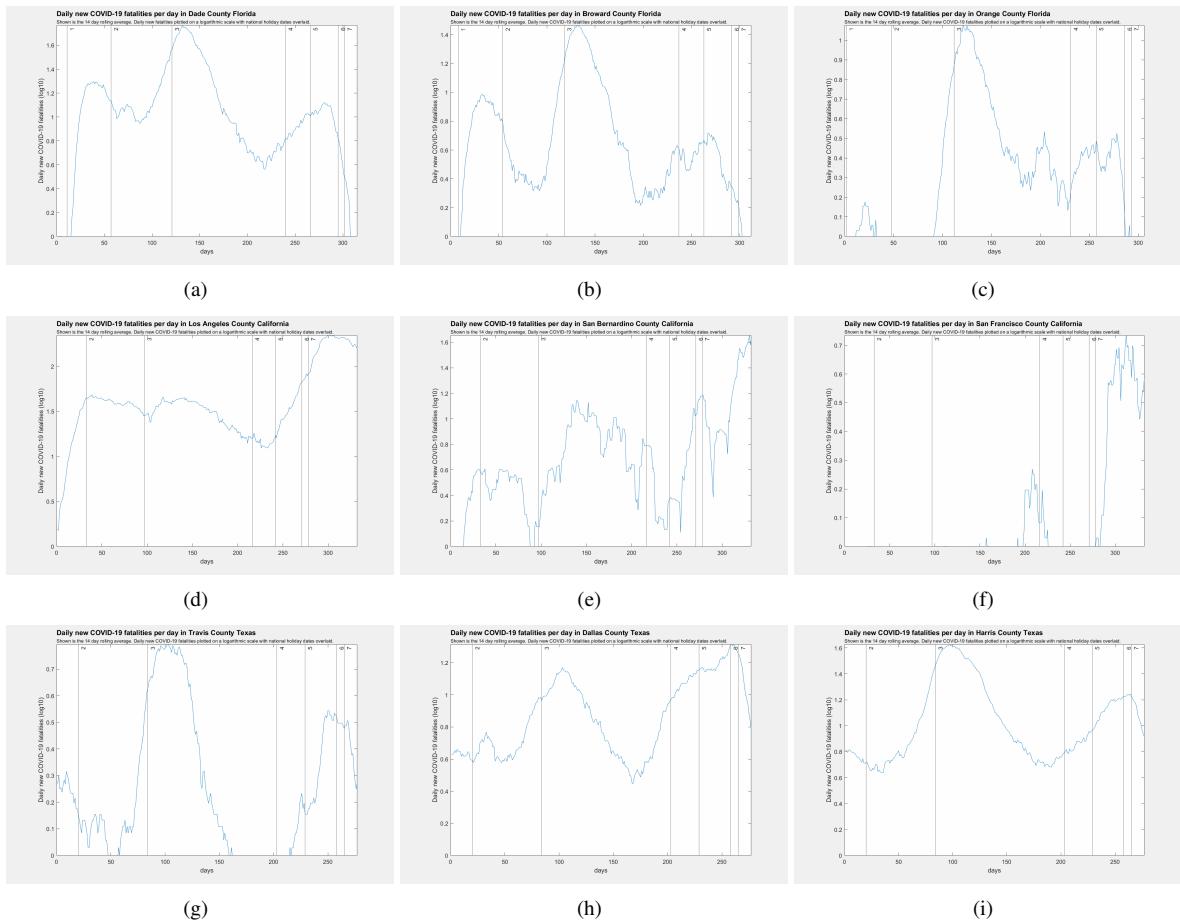


Figure 36: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

#### **6.4 County-Level Statistics on National Holidays and COVID-19**

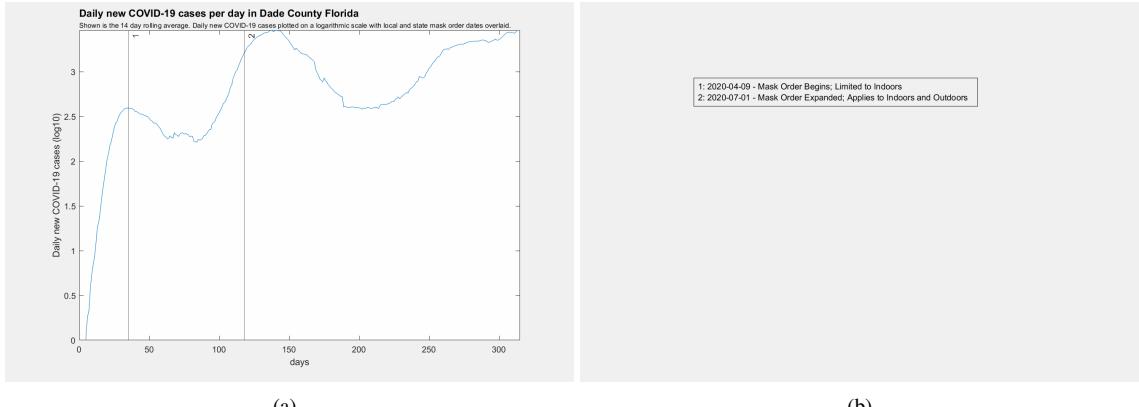
#### **6.5 The Impact of a National Holiday**

#### **6.6 Subsection**

### **7 Government Mask Order Mandates**

In figures XX-XX, the 14 day moving average of daily new COVID-19 cases, hospitalizations, and fatalities per day in 9 counties is displayed on a logarithmic scale ( $\log_{10}$ ) with vertical line overlays representing the dates in which local and state mask order dates were initiated. The counties assessed are Miami-Dade County, Florida; Broward County, Florida; Orange County, Florida; Los Angeles County, California; San Bernardino County, California; San Francisco County, California; Travis County, Texas; Dallas County, Texas; and Harris County, Texas.

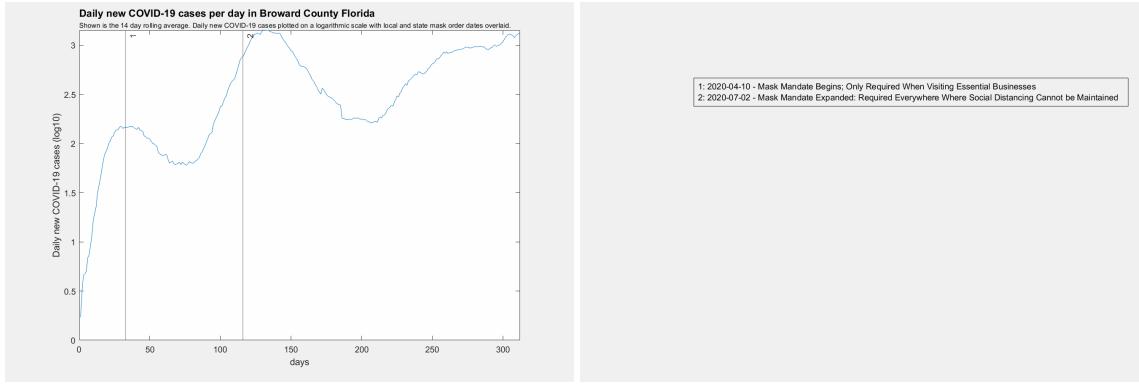
#### **7.1 Mask Order Mandates and Daily New COVID-19 Cases**



(a)

(b)

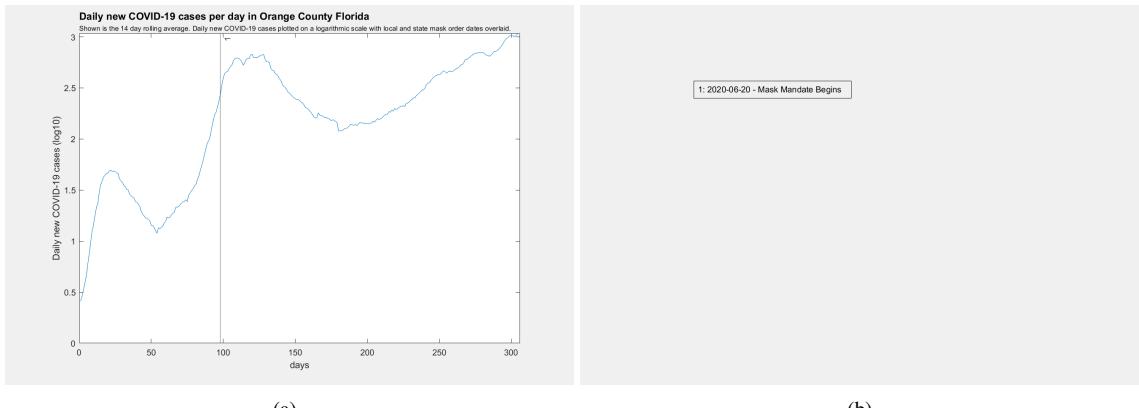
Figure 37: (a) blah (b) blah



(a)

(b)

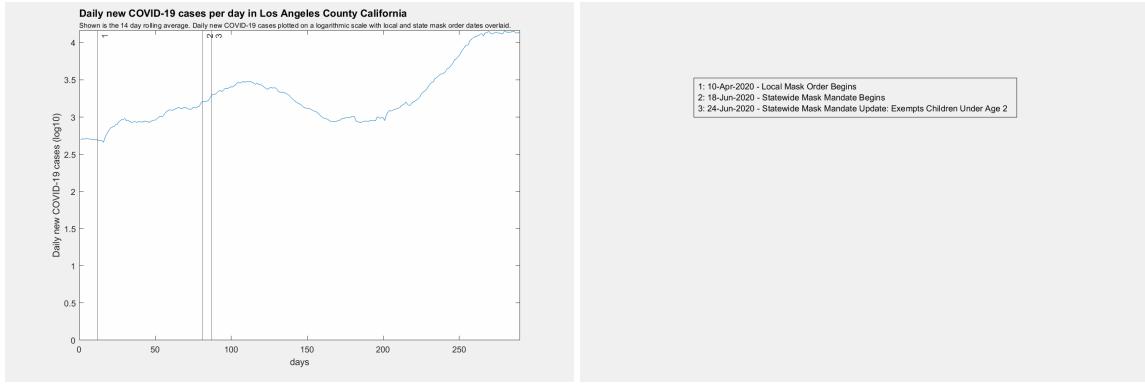
Figure 38: (a) blah (b) blah



(a)

(b)

Figure 39: (a) blah (b) blah

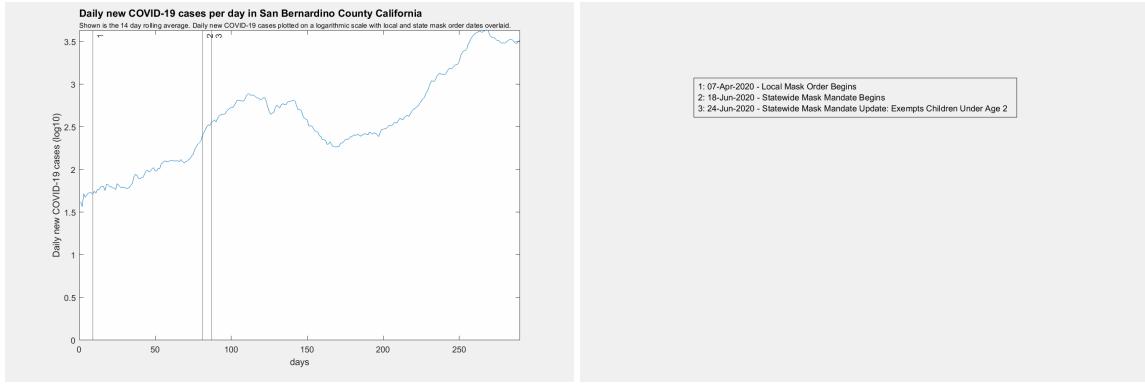


(a)

1: 10-Apr-2020 - Local Mask Order Begins  
2: 18-Jun-2020 - Statewide Mask Mandate Begins  
3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

Figure 40: (a) blah (b) blah

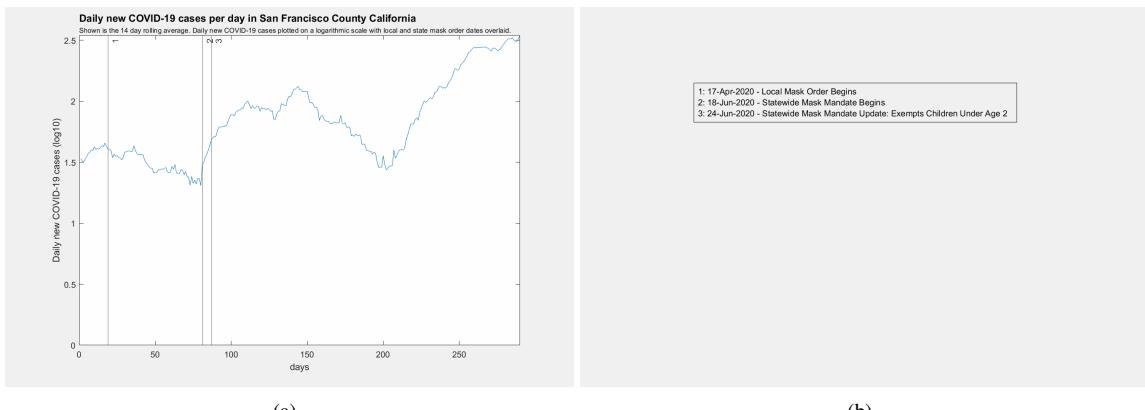


(a)

1: 07-Apr-2020 - Local Mask Order Begins  
2: 18-Jun-2020 - Statewide Mask Mandate Begins  
3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

Figure 41: (a) blah (b) blah

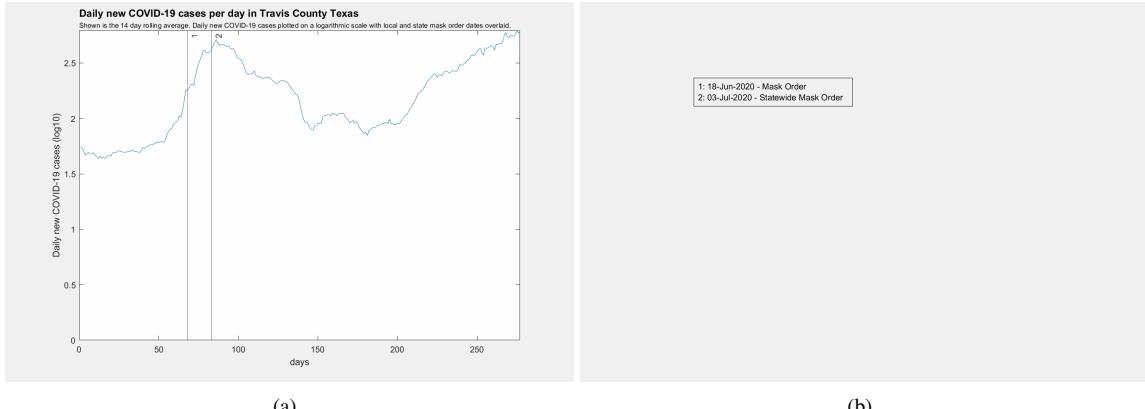


(a)

1: 17-Apr-2020 - Local Mask Order Begins  
2: 18-Jun-2020 - Statewide Mask Mandate Begins  
3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

Figure 42: (a) blah (b) blah

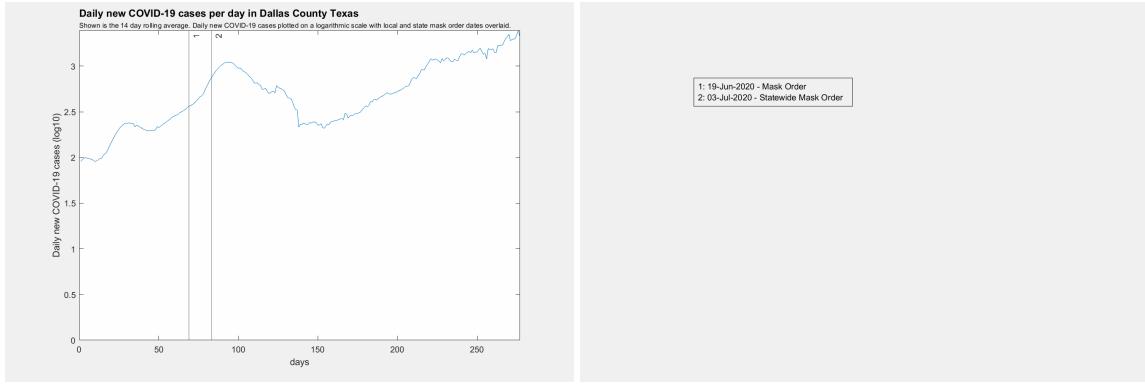


(a)

1: 18-Jun-2020 - Mask Order  
2: 03-Jul-2020 - Statewide Mask Order

(b)

Figure 43: (a) blah (b) blah

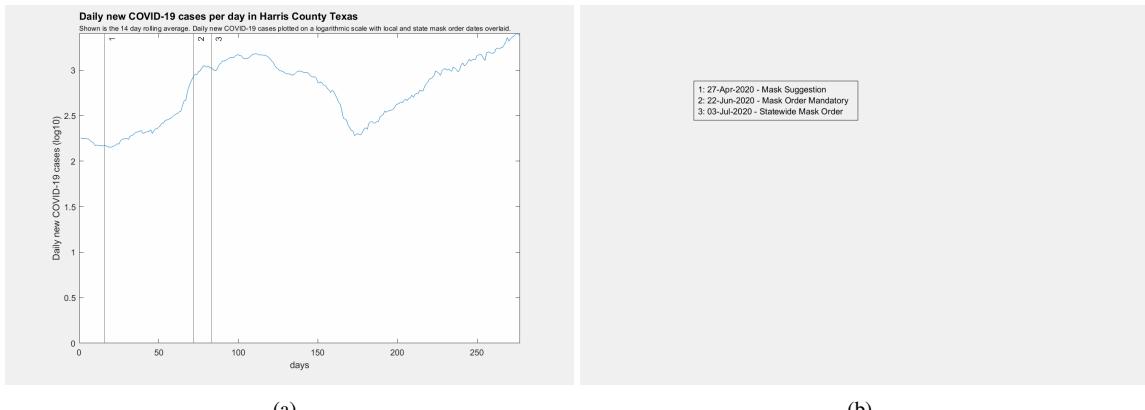


(a)

1: 19-Jun-2020 - Mask Order  
2: 03-Jul-2020 - Statewide Mask Order

(b)

Figure 44: (a) blah (b) blah



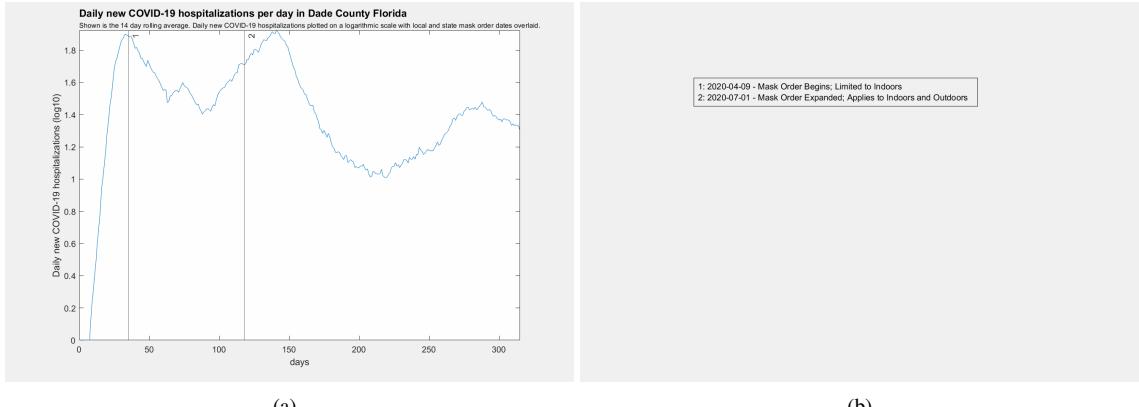
(a)

1: 27-Apr-2020 - Mask Suggestion  
2: 22-Jun-2020 - Mask Order Mandatory  
3: 03-Jul-2020 - Statewide Mask Order

(b)

Figure 45: (a) blah (b) blah

## **7.2 Mask Order Mandates and Daily New COVID-19 Hospitalizations**

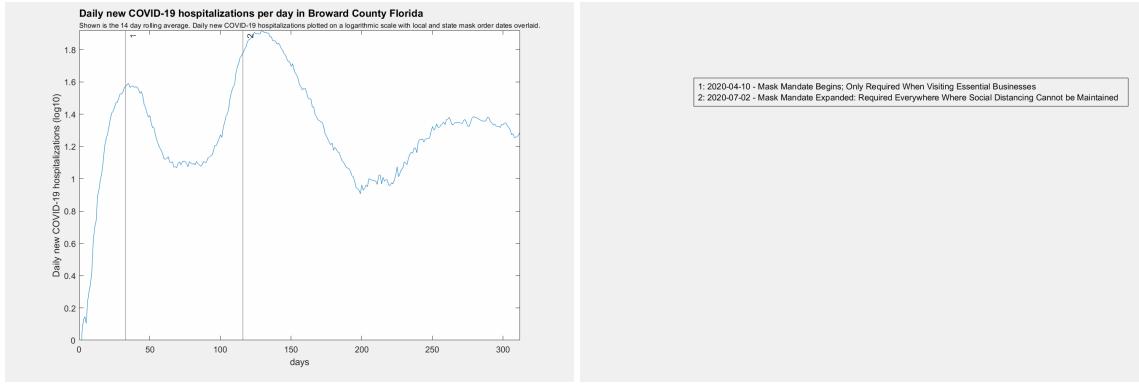


(a)

1: 2020-04-09 - Mask Order Begins; Limited to Indoors  
2: 2020-07-01 - Mask Order Expanded; Applies to Indoors and Outdoors

(b)

Figure 46: (a) blah (b) blah

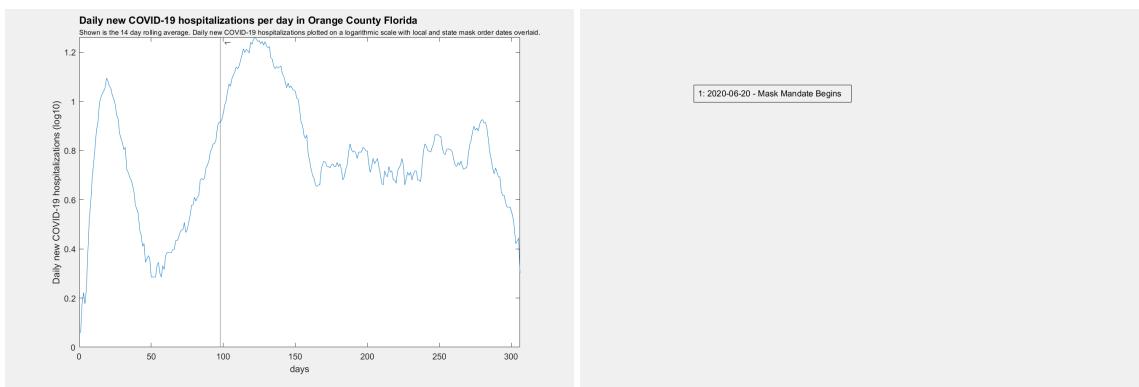


(a)

1: 2020-04-10 - Mask Mandate Begins; Only Required When Visiting Essential Businesses  
2: 2020-07-02 - Mask Mandate Expanded; Required Everywhere Where Social Distancing Cannot be Maintained

(b)

Figure 47: (a) blah (b) blah

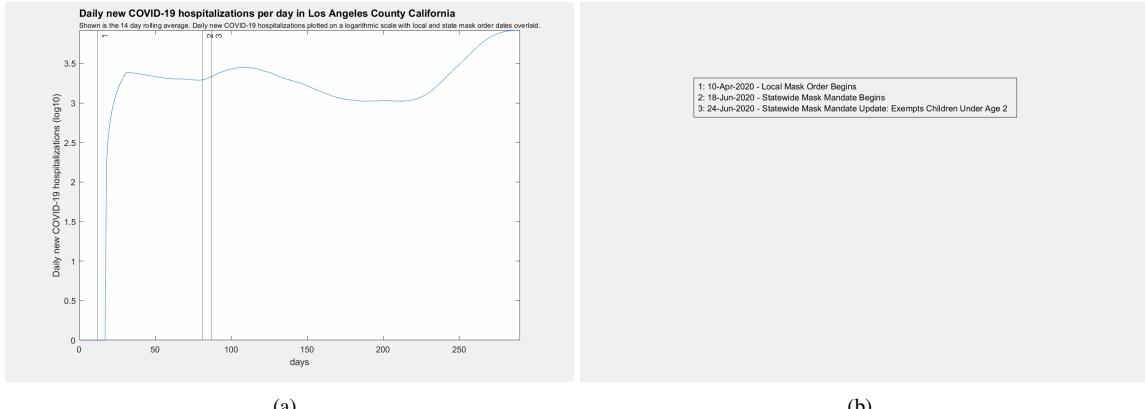


(a)

1: 2020-09-20 - Mask Mandate Begins

(b)

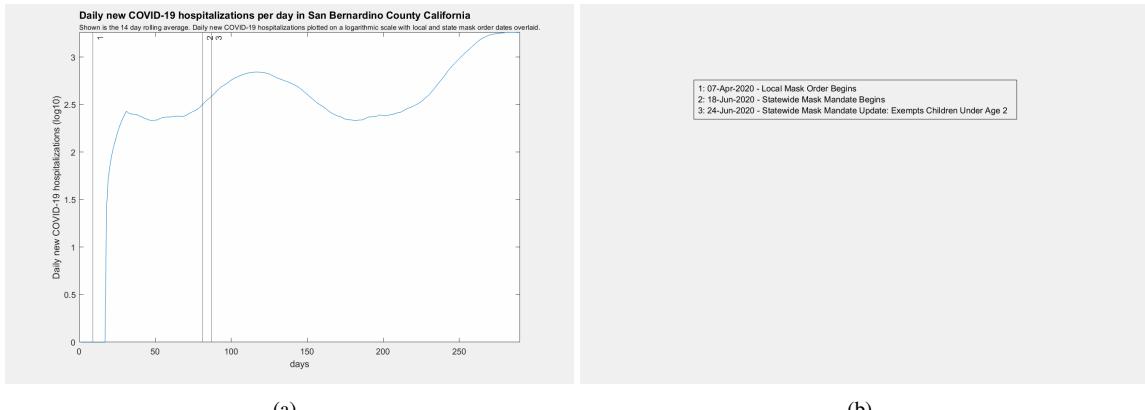
Figure 48: (a) blah (b) blah



1: 10-Apr-2020 - Local Mask Order Begins  
2: 18-Jun-2020 - Statewide Mask Mandate Begins  
3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

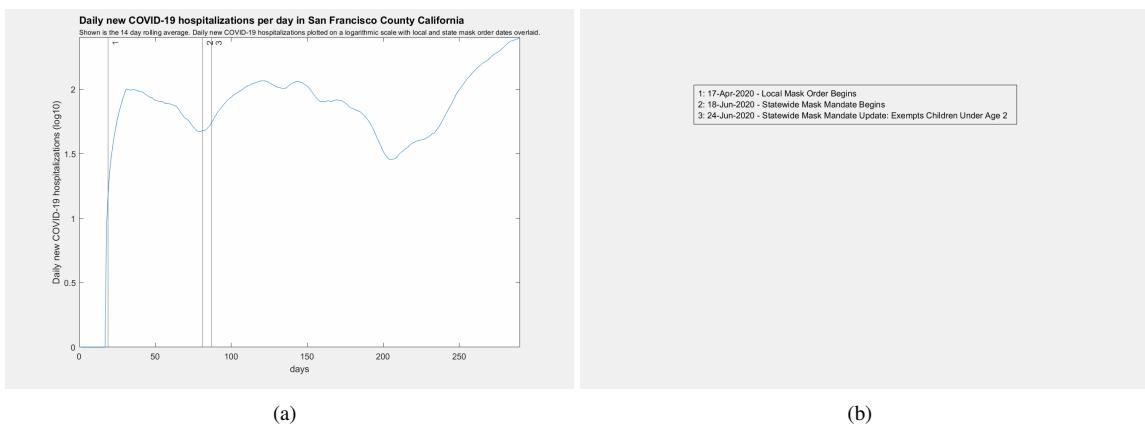
Figure 49: (a) blah (b) blah



1: 07-Apr-2020 - Local Mask Order Begins  
2: 18-Jun-2020 - Statewide Mask Mandate Begins  
3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

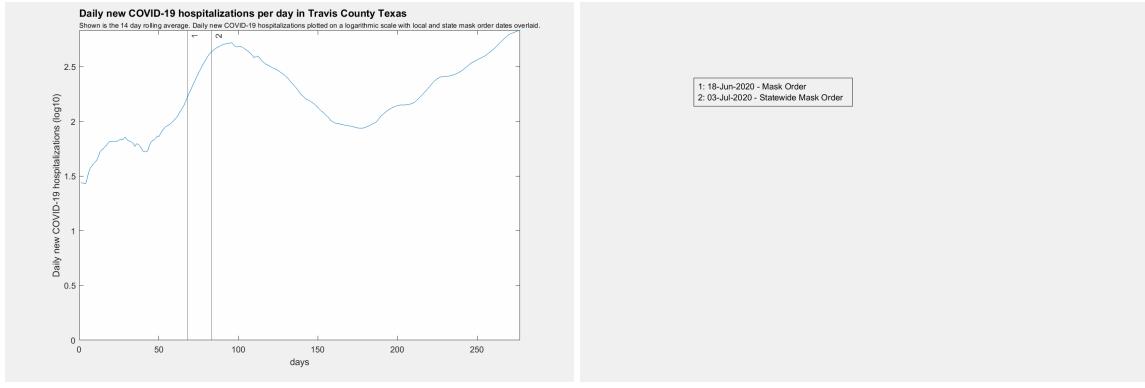
Figure 50: (a) blah (b) blah



1: 17-Apr-2020 - Local Mask Order Begins  
2: 18-Jun-2020 - Statewide Mask Mandate Begins  
3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

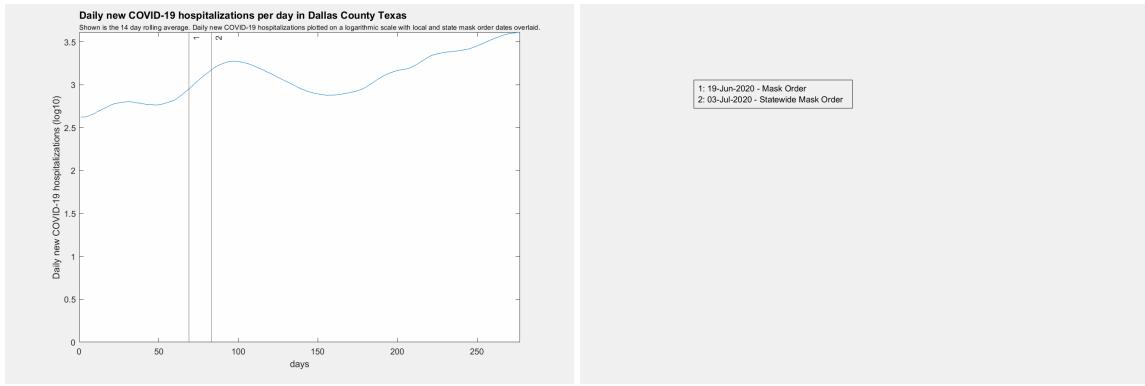
Figure 51: (a) blah (b) blah



(a)

(b)

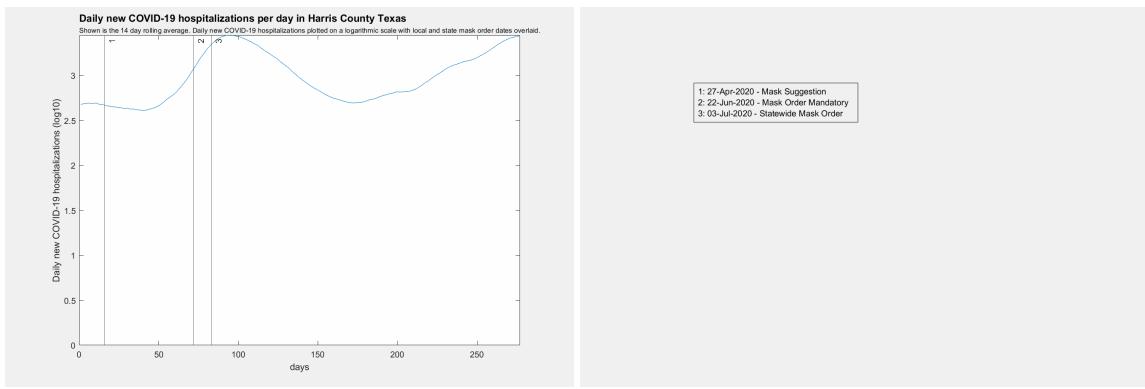
Figure 52: (a) blah (b) blah



(a)

(b)

Figure 53: (a) blah (b) blah

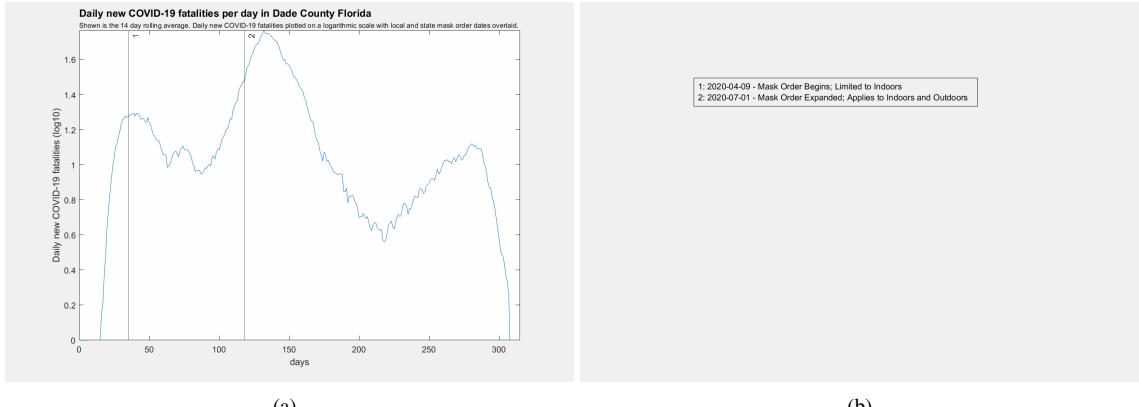


(a)

(b)

Figure 54: (a) blah (b) blah

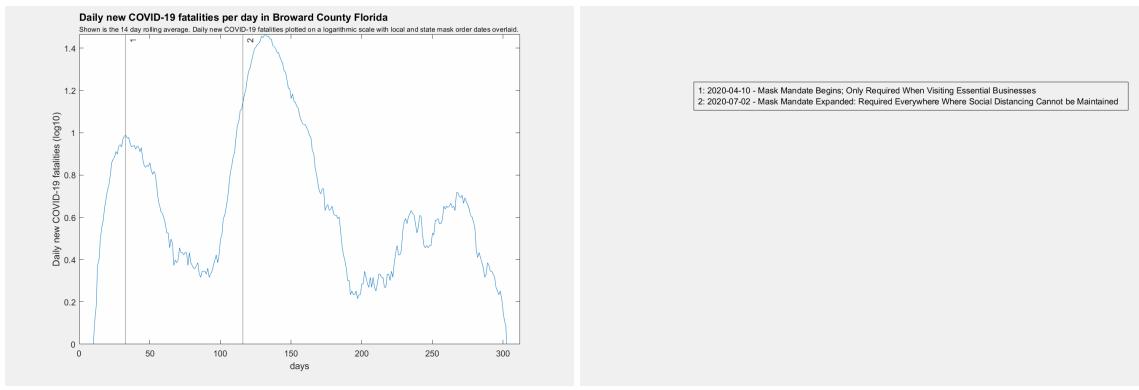
### **7.3 Mask Order Mandates and Daily New COVID-19 Cases**



(a)

(b)

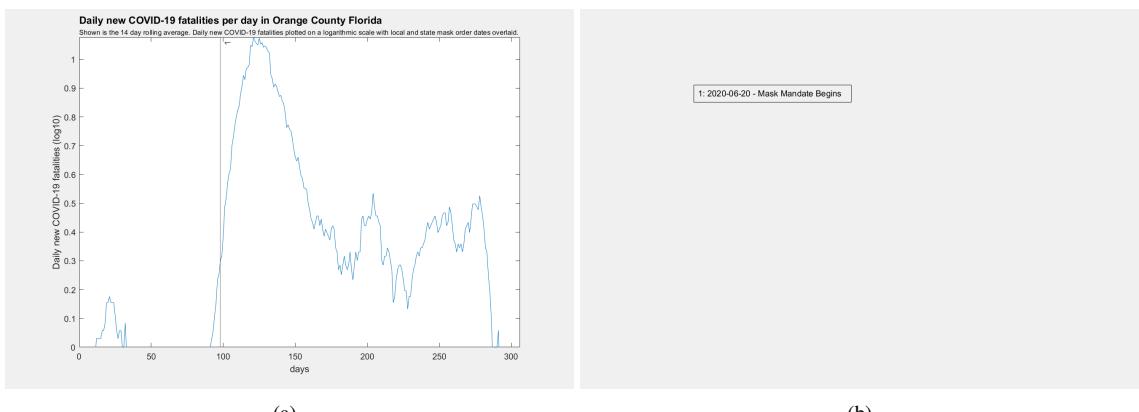
Figure 55: (a) blah (b) blah



(a)

(b)

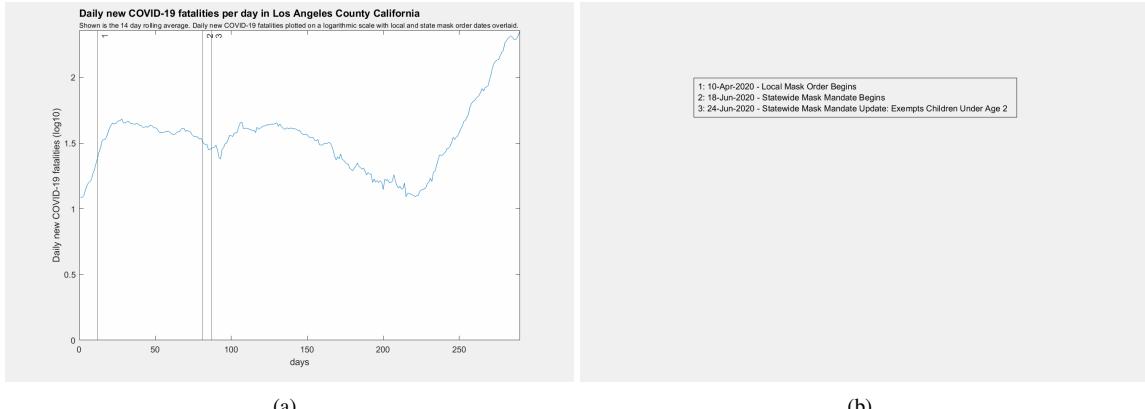
Figure 56: (a) blah (b) blah



(a)

(b)

Figure 57: (a) blah (b) blah

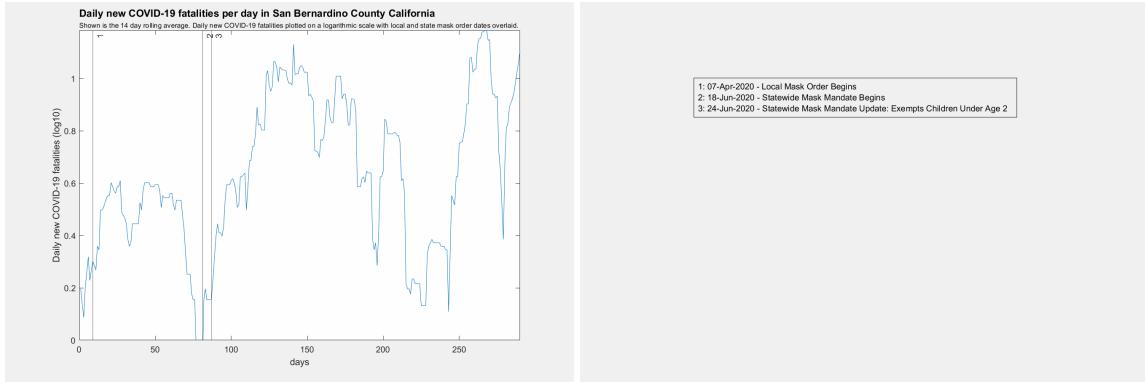


(a)

1: 10-Apr-2020 - Local Mask Order Begins  
2: 18-Jun-2020 - Statewide Mask Mandate Begins  
3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

Figure 58: (a) blah (b) blah

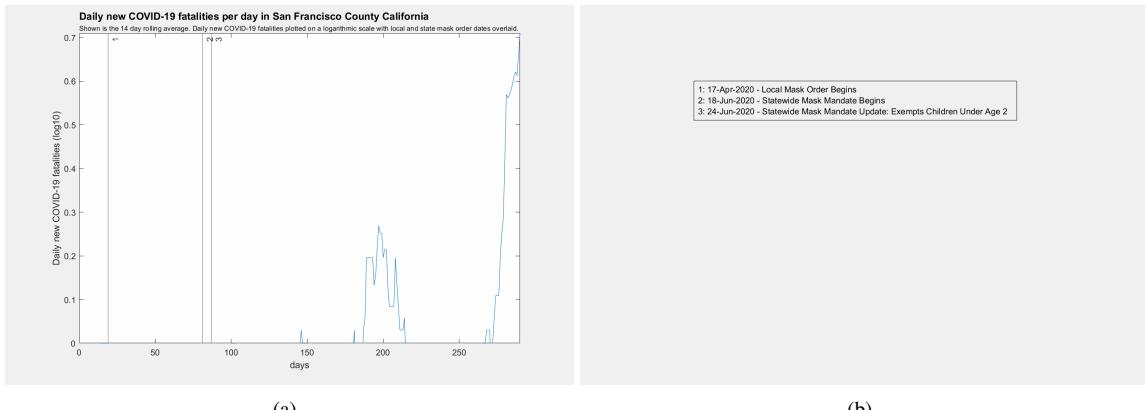


(a)

1: 07-Apr-2020 - Local Mask Order Begins  
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3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

Figure 59: (a) blah (b) blah

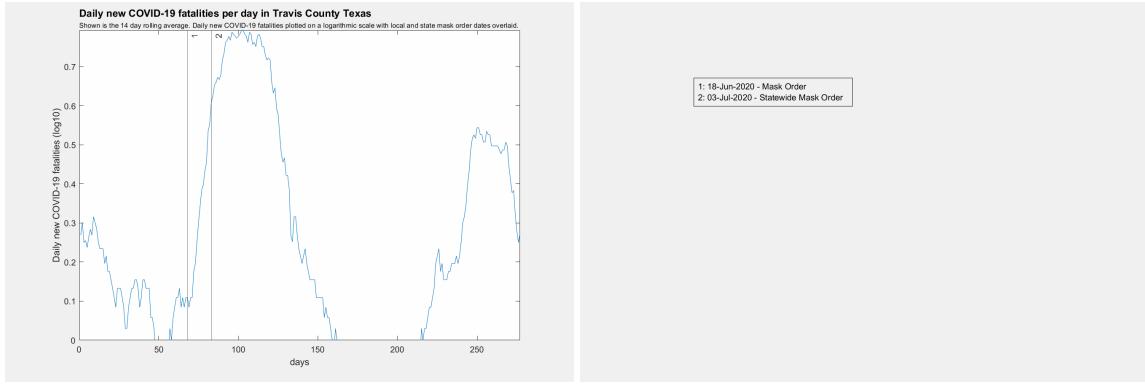


(a)

1: 17-Apr-2020 - Local Mask Order Begins  
2: 18-Jun-2020 - Statewide Mask Mandate Begins  
3: 24-Jun-2020 - Statewide Mask Mandate Update: Exempts Children Under Age 2

(b)

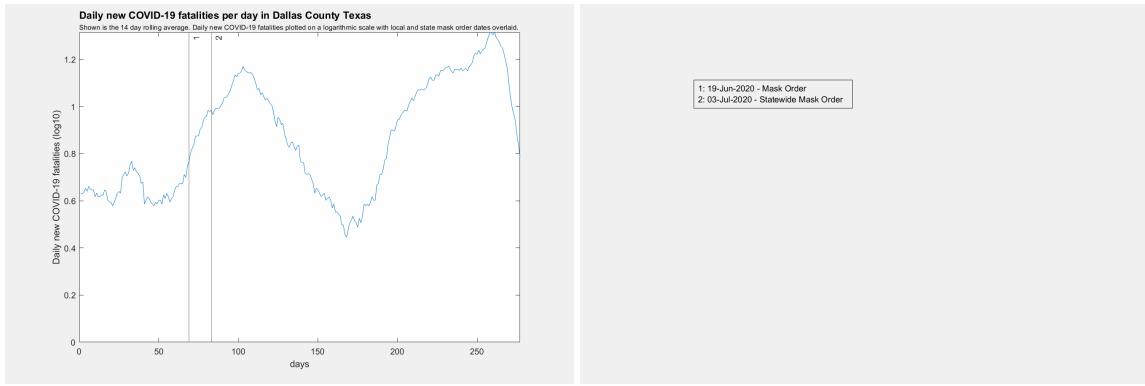
Figure 60: (a) blah (b) blah



(a)

(b)

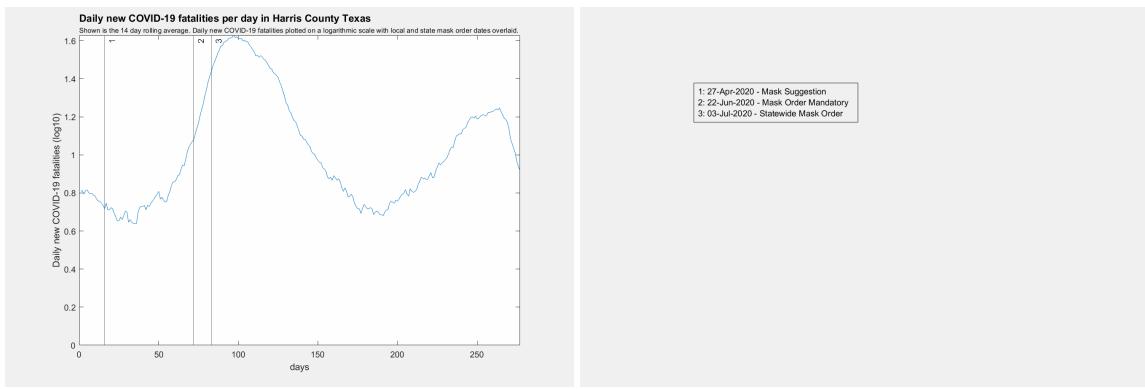
Figure 61: (a) blah (b) blah



(a)

(b)

Figure 62: (a) blah (b) blah



(a)

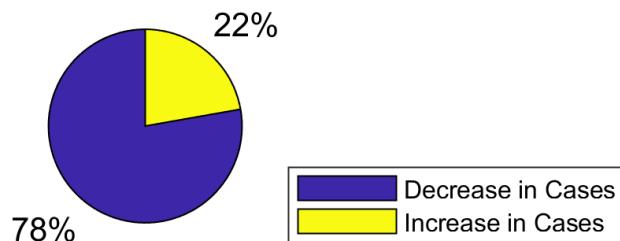
(b)

Figure 63: (a) blah (b) blah

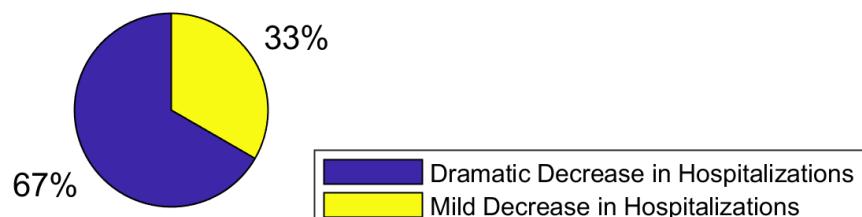
**7.4 County-Level Statistics on COVID-19 and Government Mask Orders**

**7.5 The Impact of a Mask Order on the Spread of COVID-19**

**COVID-19 Cases Per-Day After Local & State Mask Order Implementation**



**COVID-19 Hospitalizations Per-Day After Local & State Mask Order Implementation**



**COVID-19 Fatalities Per-Day After Mask Order Implementation**

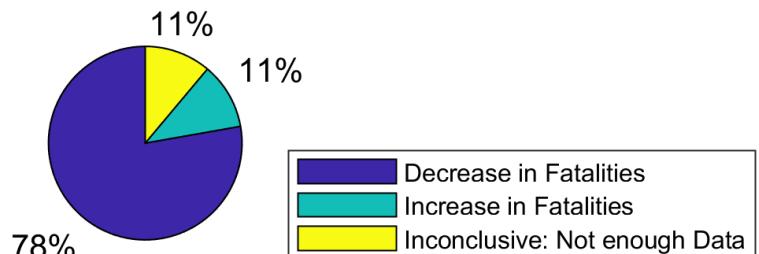
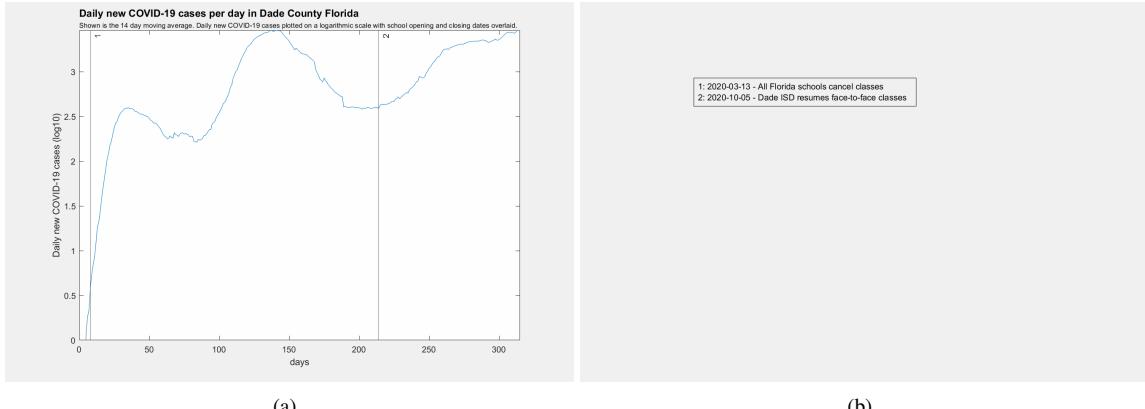


Figure 64: County-level COVID-19 case, hospitalization, and fatality statistics after local and state mask mandates are implemented (note: some counties do not have statewide mask mandates in place).

## **8 School Closings, and School Re-openings**

In figures XX-XX, the 14 day moving average of daily new COVID-19 cases, hospitalizations and fatalities per day in 9 counties is displayed on a logarithmic scale ( $\log_{10}$ ) with vertical line overlays representing the dates in which local school openings and closings have occurred. The counties assessed are Miami-Dade County, Florida; Broward County, Florida; Orange County, Florida; Los Angeles County, California; San Bernardino County, California; San Francisco County, California; Travis County, Texas; Dallas County, Texas; and Harris County, Texas.

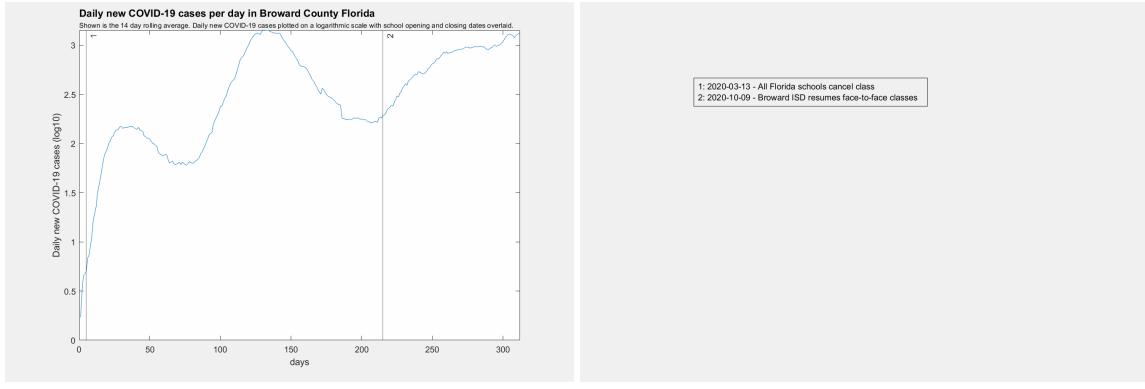
### **8.1 Schools and Daily New COVID-19 Cases**



(a)

(b)

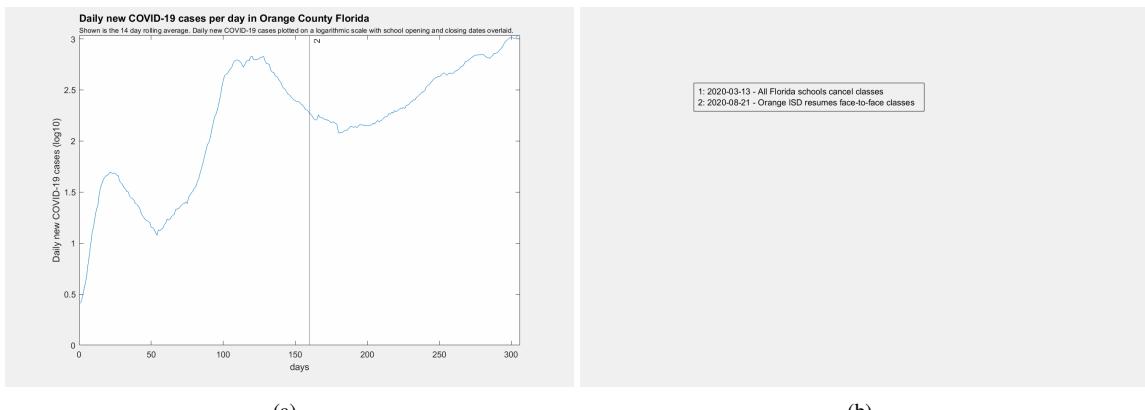
Figure 65: (a) blah (b) blah



(a)

(b)

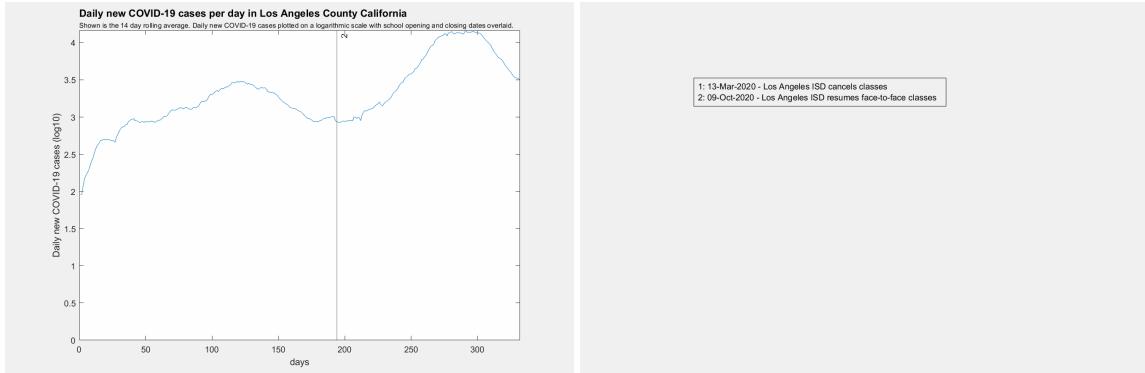
Figure 66: (a) blah (b) blah



(a)

(b)

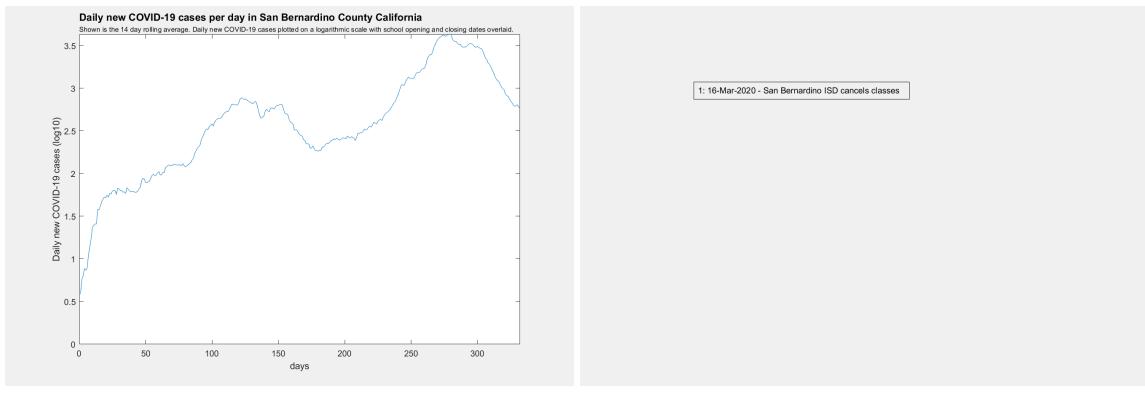
Figure 67: (a) blah (b) blah



(a)

(b)

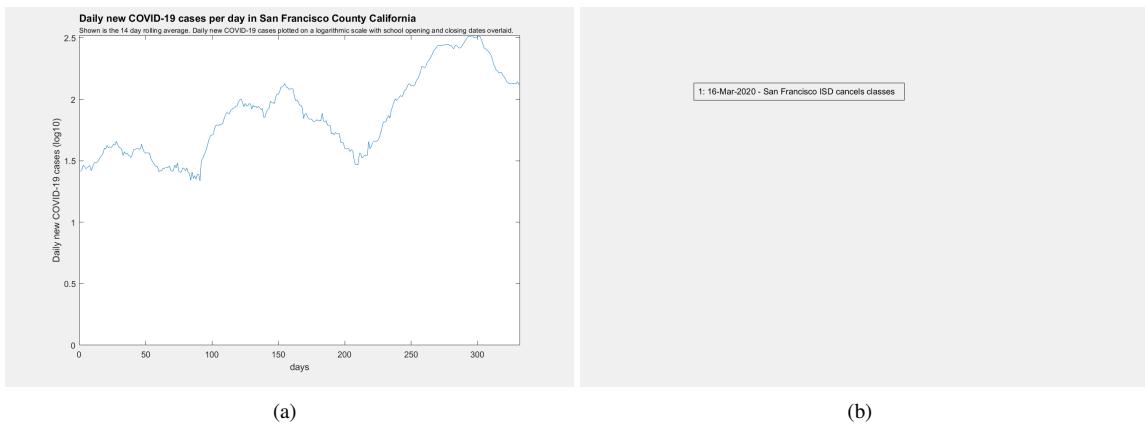
Figure 68: (a) blah (b) blah



(a)

(b)

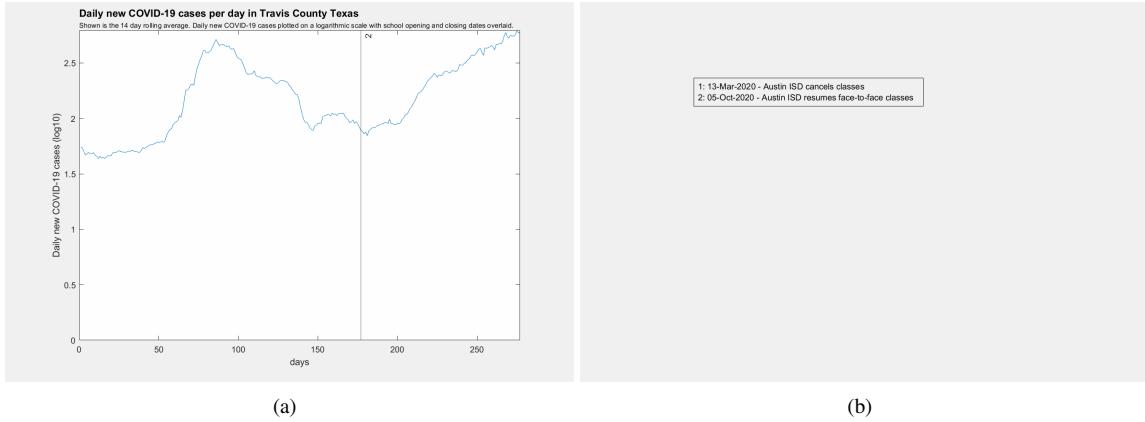
Figure 69: (a) blah (b) blah



(a)

(b)

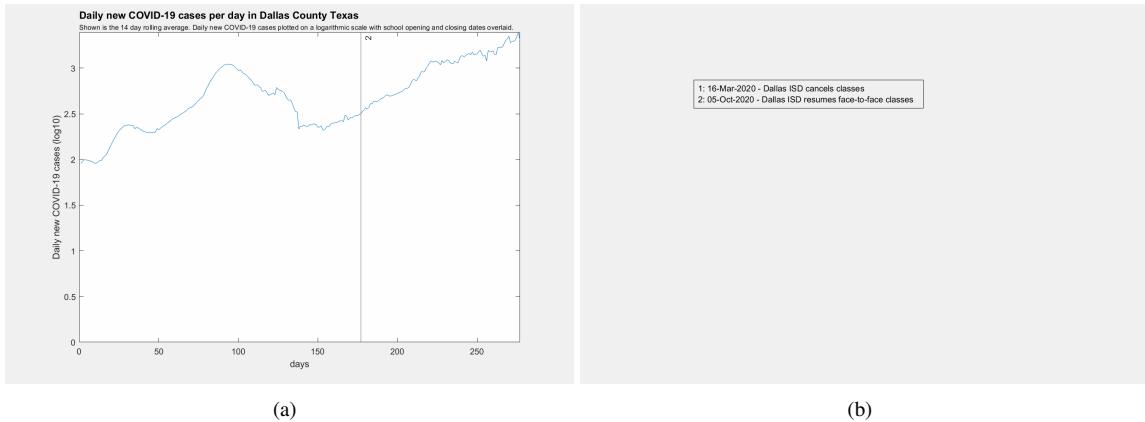
Figure 70: (a) blah (b) blah



(a)

(b)

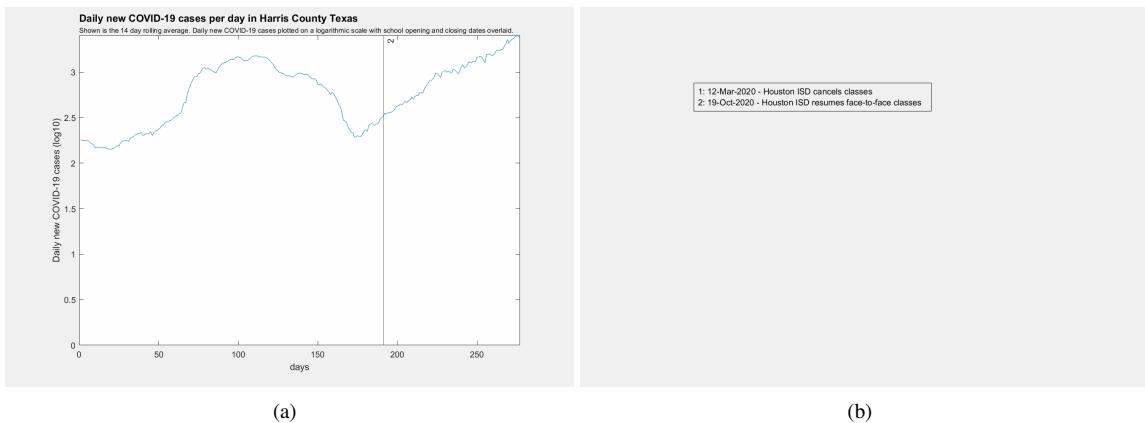
Figure 71: (a) blah (b) blah



(a)

(b)

Figure 72: (a) blah (b) blah

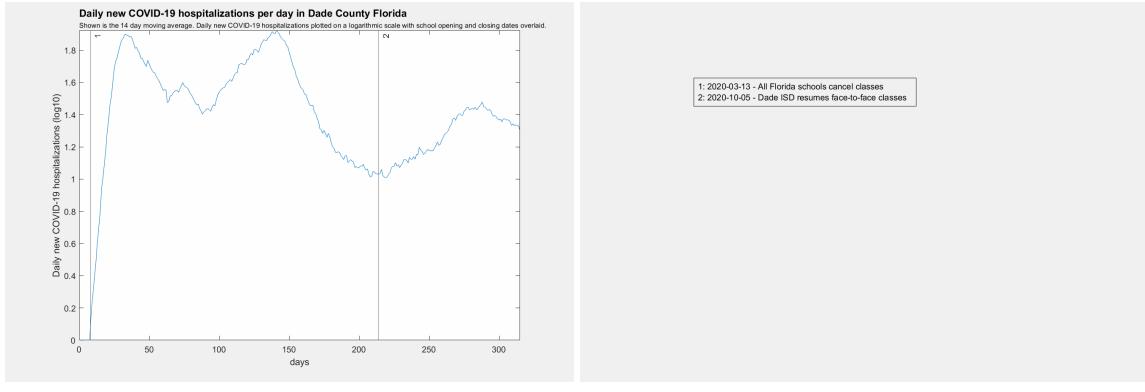


(a)

(b)

Figure 73: (a) blah (b) blah

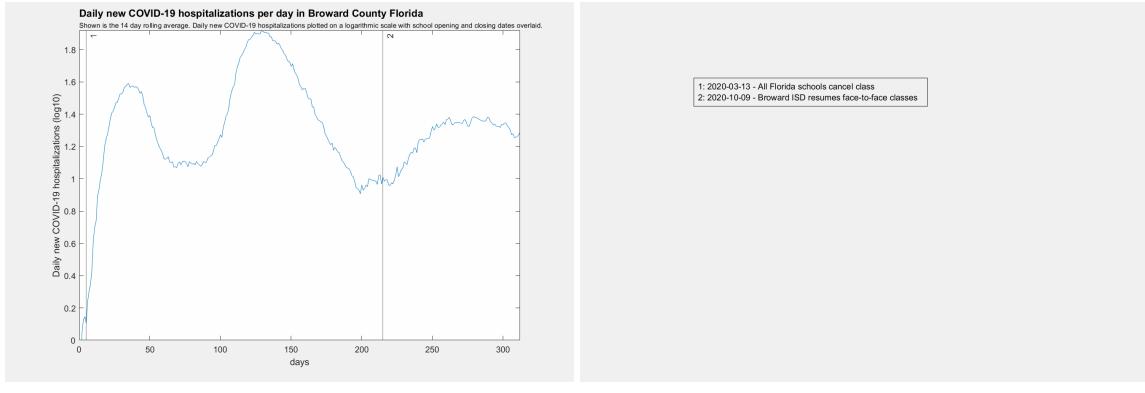
## **8.2 Schools and Daily New COVID-19 Hospitalizations**



(a)

(b)

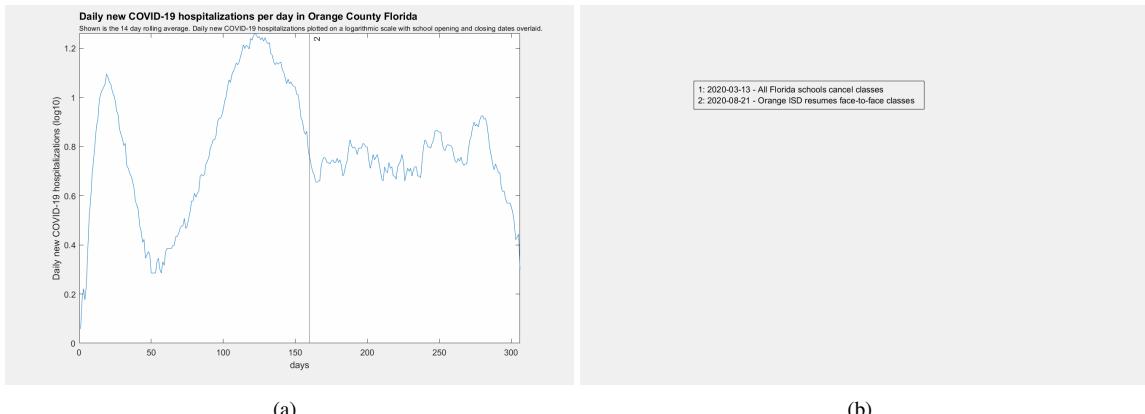
Figure 74: (a) blah (b) blah



(a)

(b)

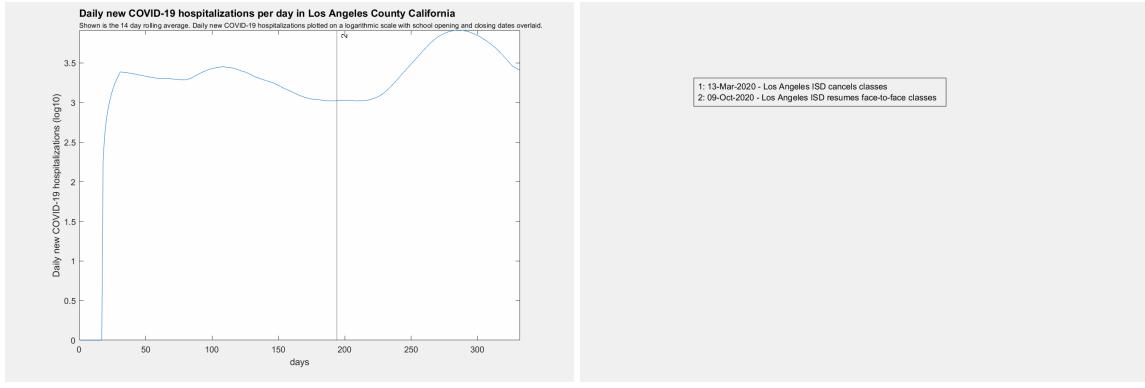
Figure 75: (a) blah (b) blah



(a)

(b)

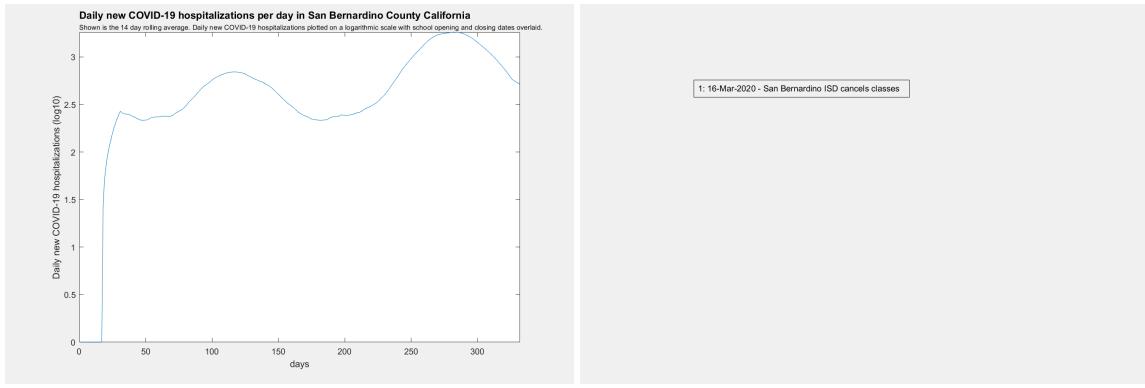
Figure 76: (a) blah (b) blah



(a)

(b)

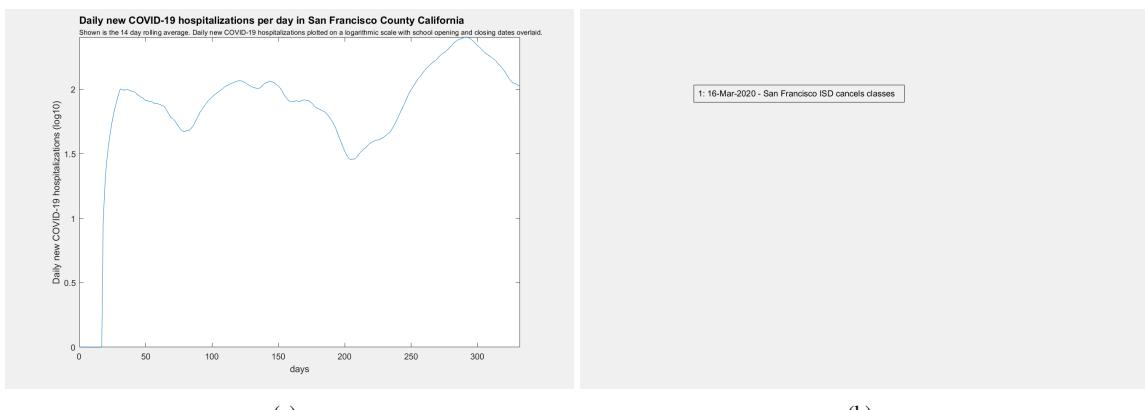
Figure 77: (a) blah (b) blah



(a)

(b)

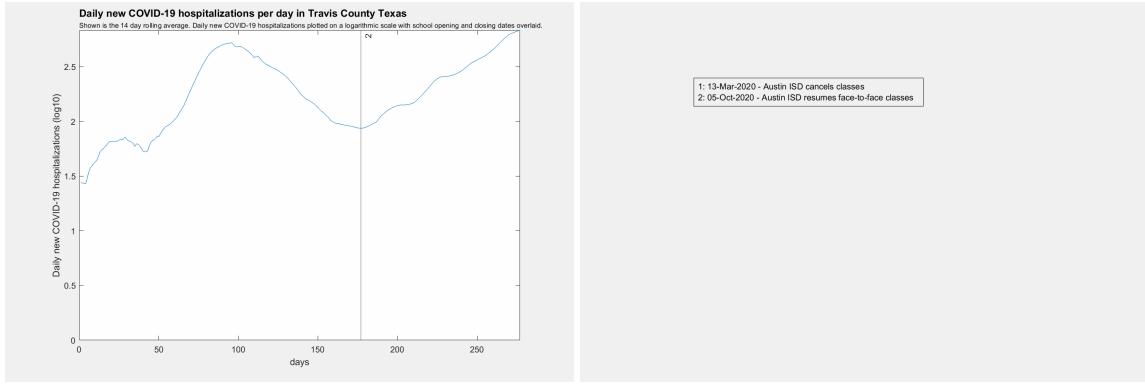
Figure 78: (a) blah (b) blah



(a)

(b)

Figure 79: (a) blah (b) blah

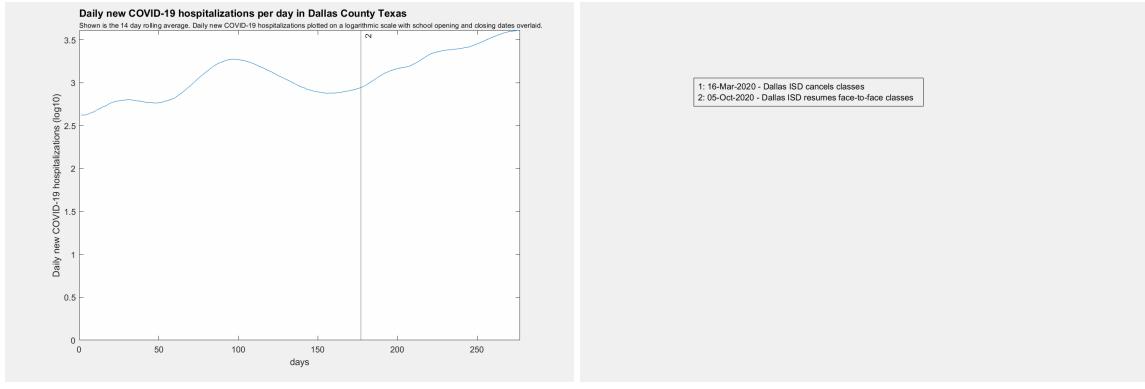


(a)

1: 13-Mar-2020 - Austin ISD cancels classes  
2: 05-Oct-2020 - Austin ISD resumes face-to-face classes

(b)

Figure 80: (a) blah (b) blah

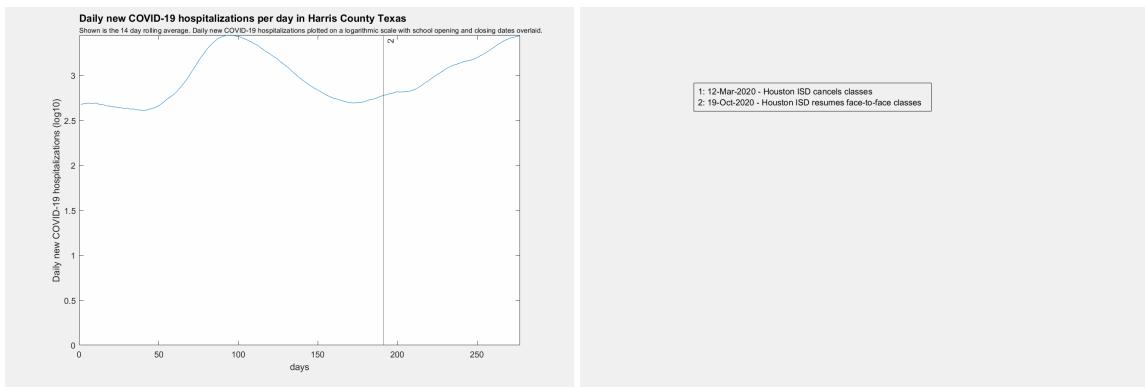


(a)

1: 16-Mar-2020 - Dallas ISD cancels classes  
2: 05-Oct-2020 - Dallas ISD resumes face-to-face classes

(b)

Figure 81: (a) blah (b) blah



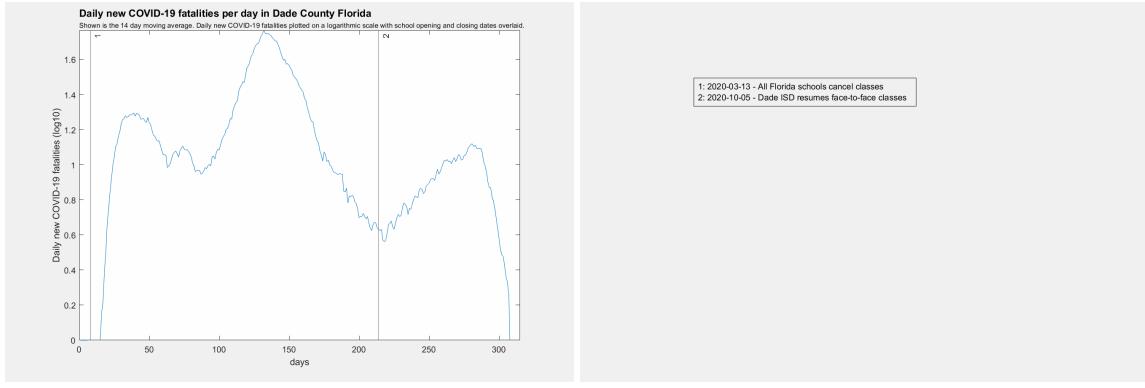
(a)

1: 12-Mar-2020 - Houston ISD cancels classes  
2: 19-Oct-2020 - Houston ISD resumes face-to-face classes

(b)

Figure 82: (a) blah (b) blah

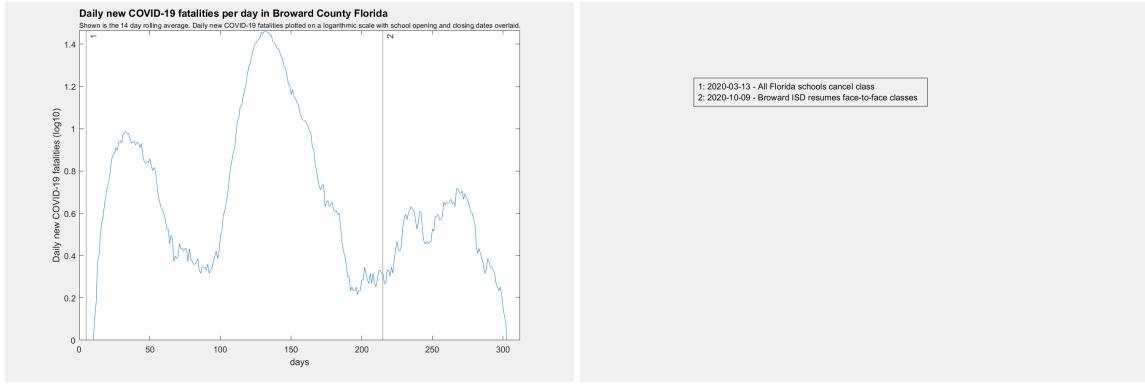
### **8.3 Schools and Daily New COVID-19 Fatalities**



(a)

(b)

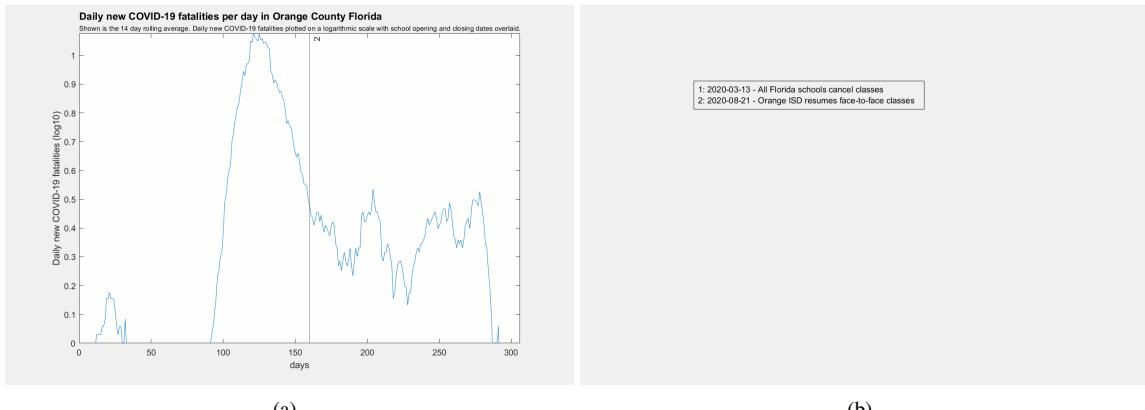
Figure 83: (a) blah (b) blah



(a)

(b)

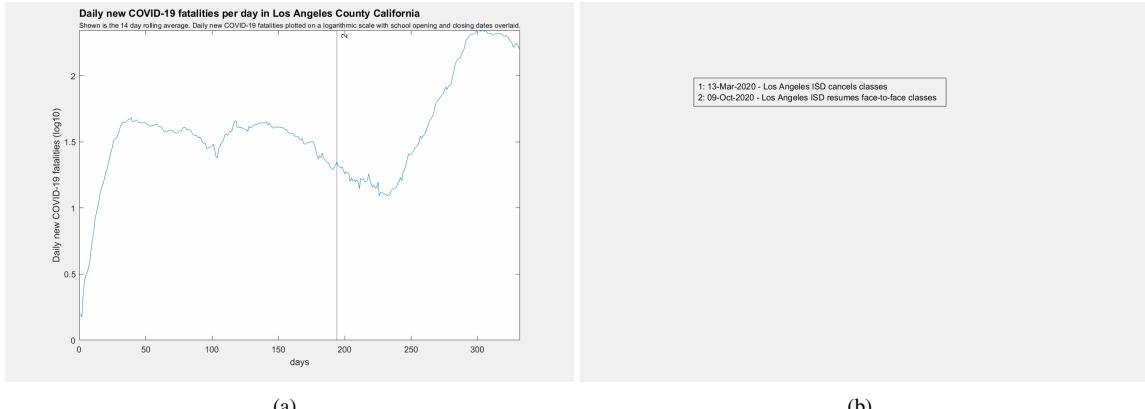
Figure 84: (a) blah (b) blah



(a)

(b)

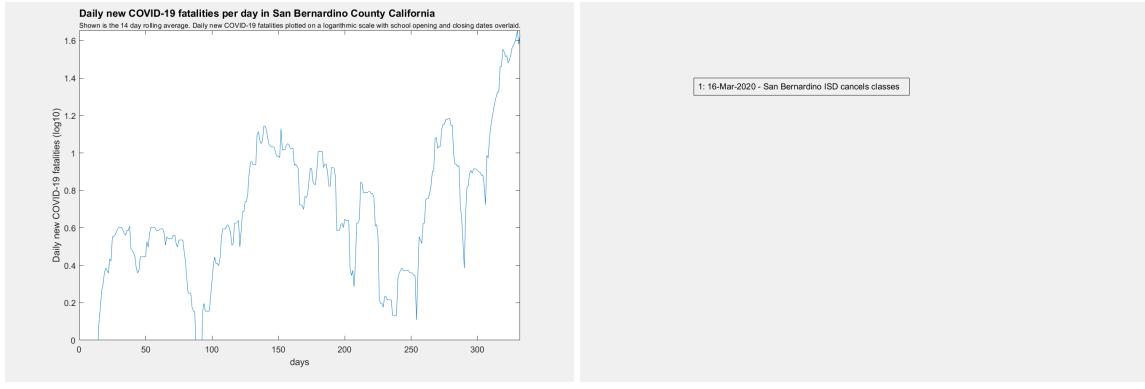
Figure 85: (a) blah (b) blah



(a)

(b)

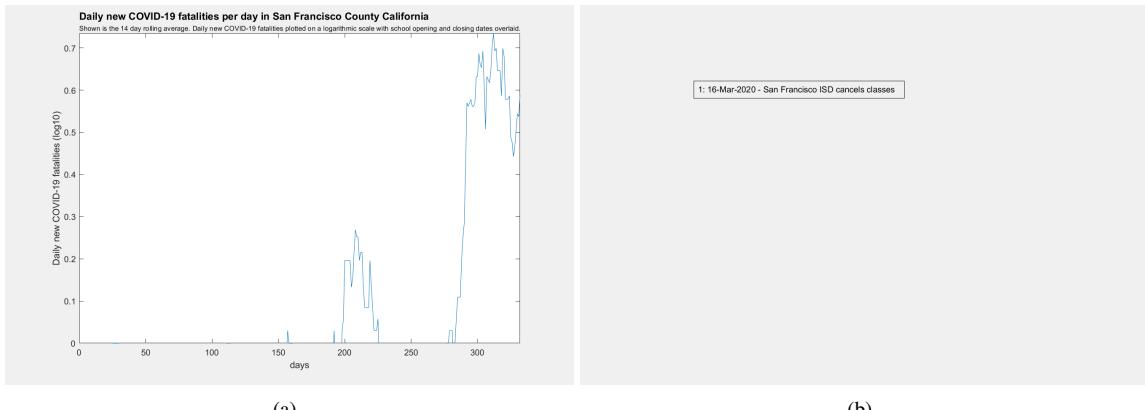
Figure 86: (a) blah (b) blah



(a)

(b)

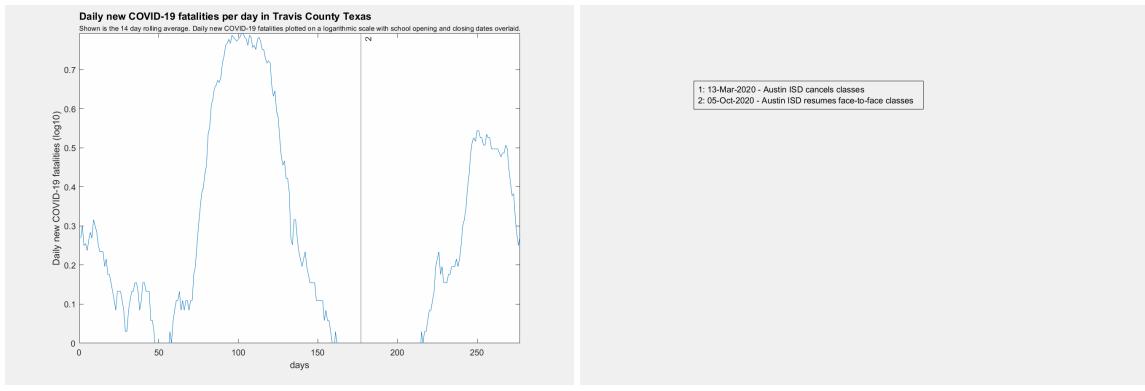
Figure 87: (a) blah (b) blah



(a)

(b)

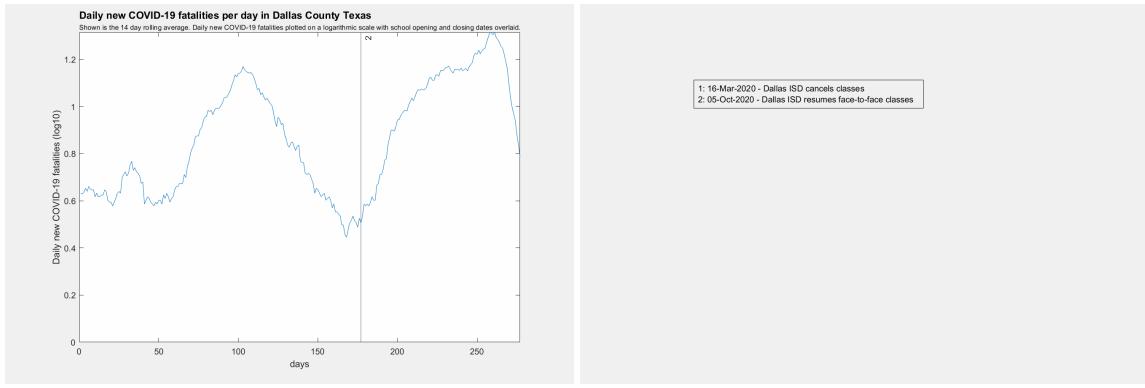
Figure 88: (a) blah (b) blah



(a)

(b)

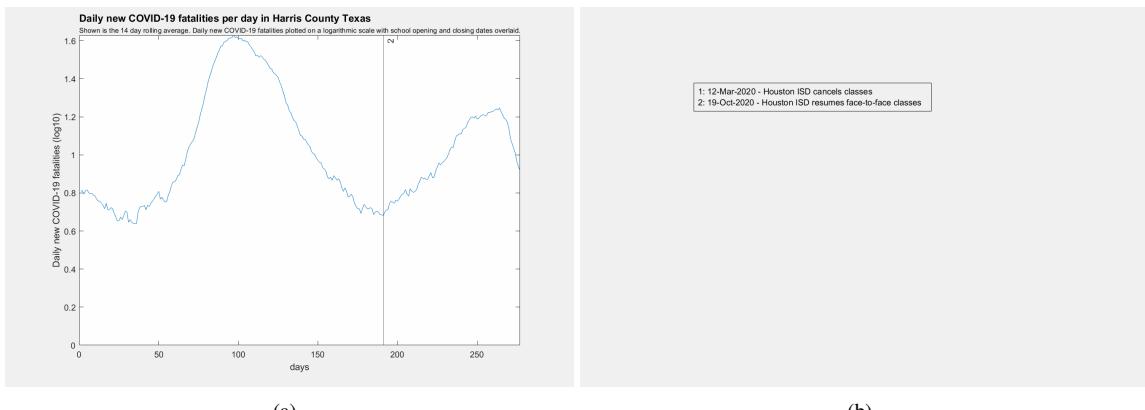
Figure 89: (a) blah (b) blah



(a)

(b)

Figure 90: (a) blah (b) blah



(a)

(b)

Figure 91: (a) blah (b) blah