

# 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 COVID-19 Vaccine Rollout and Administration

### 1.1 Vaccine Rollout, Administration and Cases

- 
- 1: 11-Dec-2020 - Pfizer-BioNTech Vaccine Authorized by FDA
  - 2: 18-Dec-2020 - Moderna Vaccine Authorized by FDA
  - 3: 16-Dec-2020 - 2.9 Million Pfizer Vaccines Shipped out Nationwide
  - 4: 31-Jan-2021 - Cumulative 29 Million Pfizer Vaccines Shipped out Nationwide
  - 5: 01-Feb-2021 - 17 Million Pfizer Vaccines Administered
  - 6: 14-Feb-2021 - 80-90% of first doses delivered have been administered

Figure 1

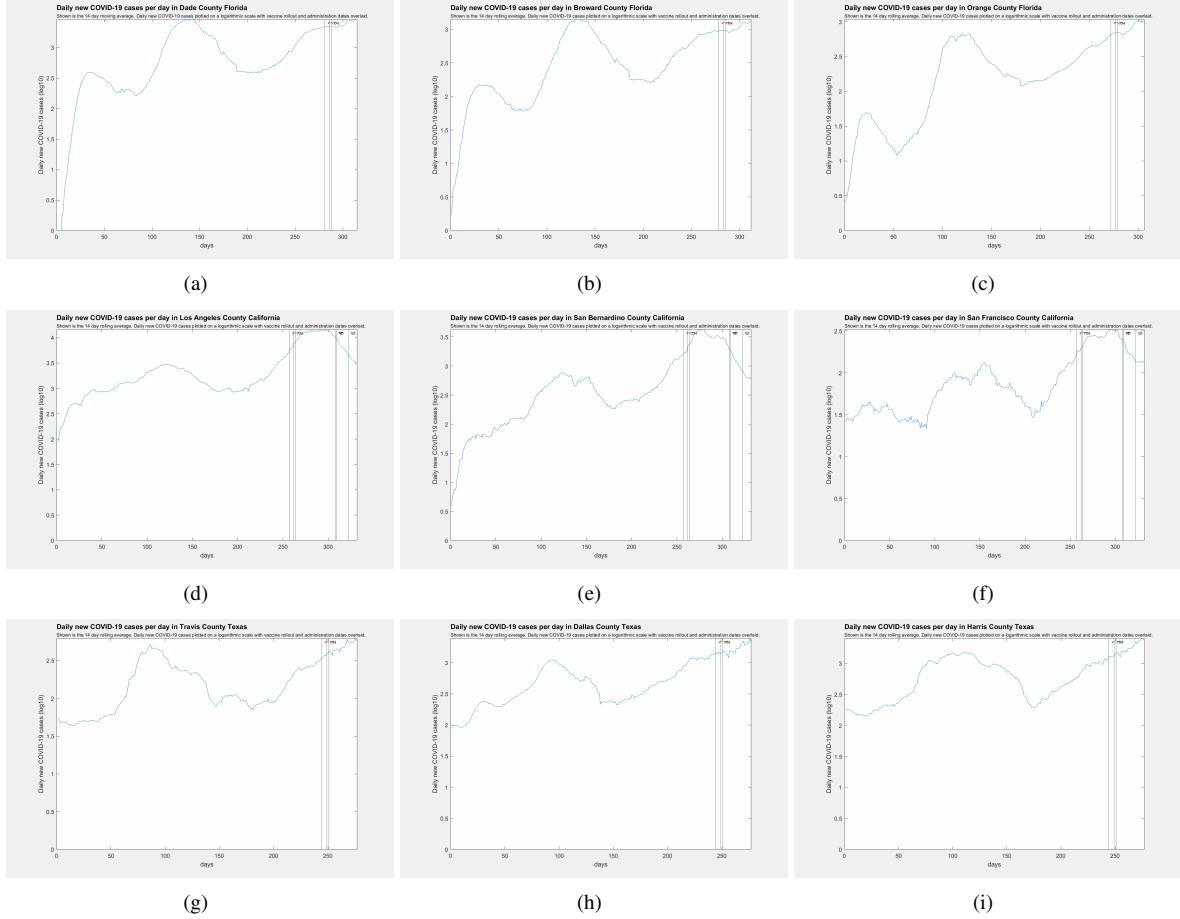


Figure 2: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

## 1.2 Vaccine Rollout, Administration and Hospitalizations



Figure 3

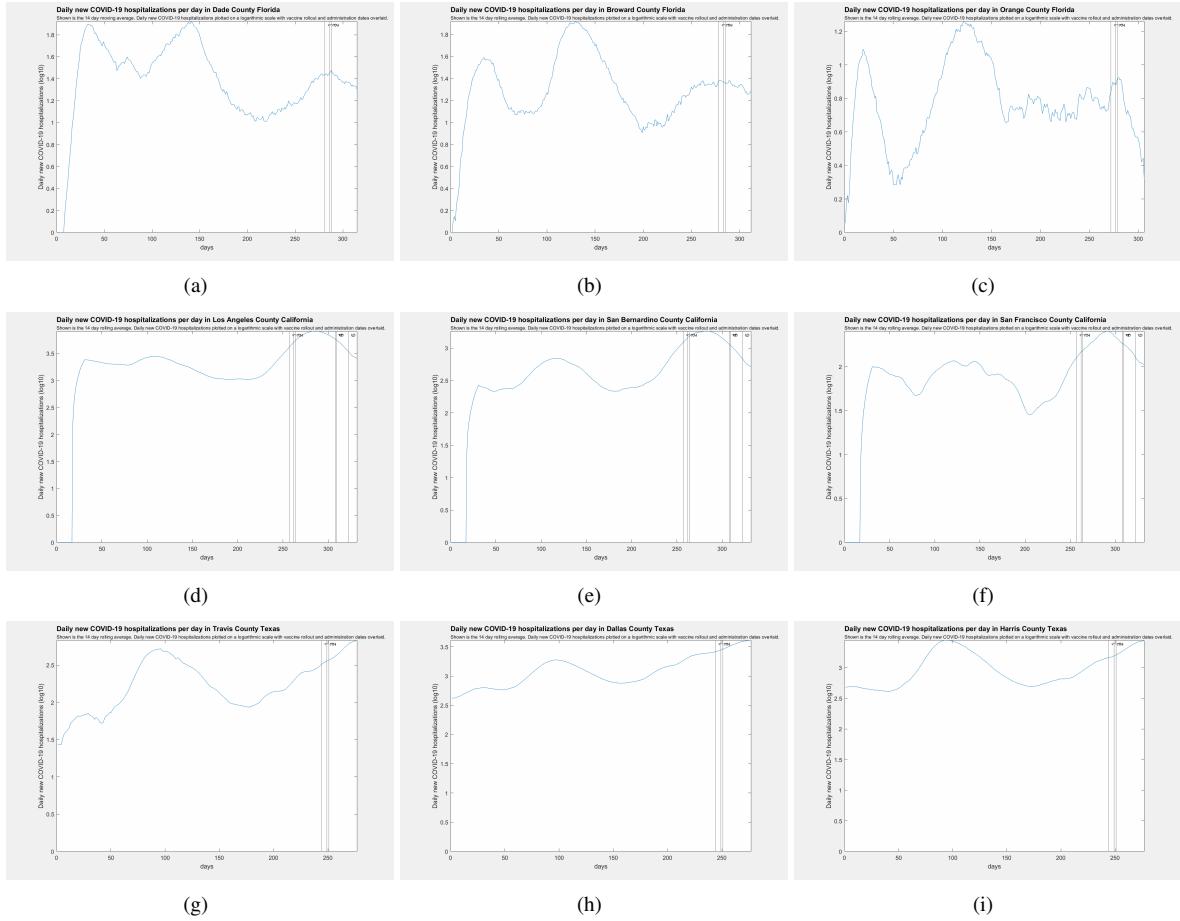


Figure 4: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

### 1.3 Vaccine Rollout, Administration and Fatalities



Figure 5

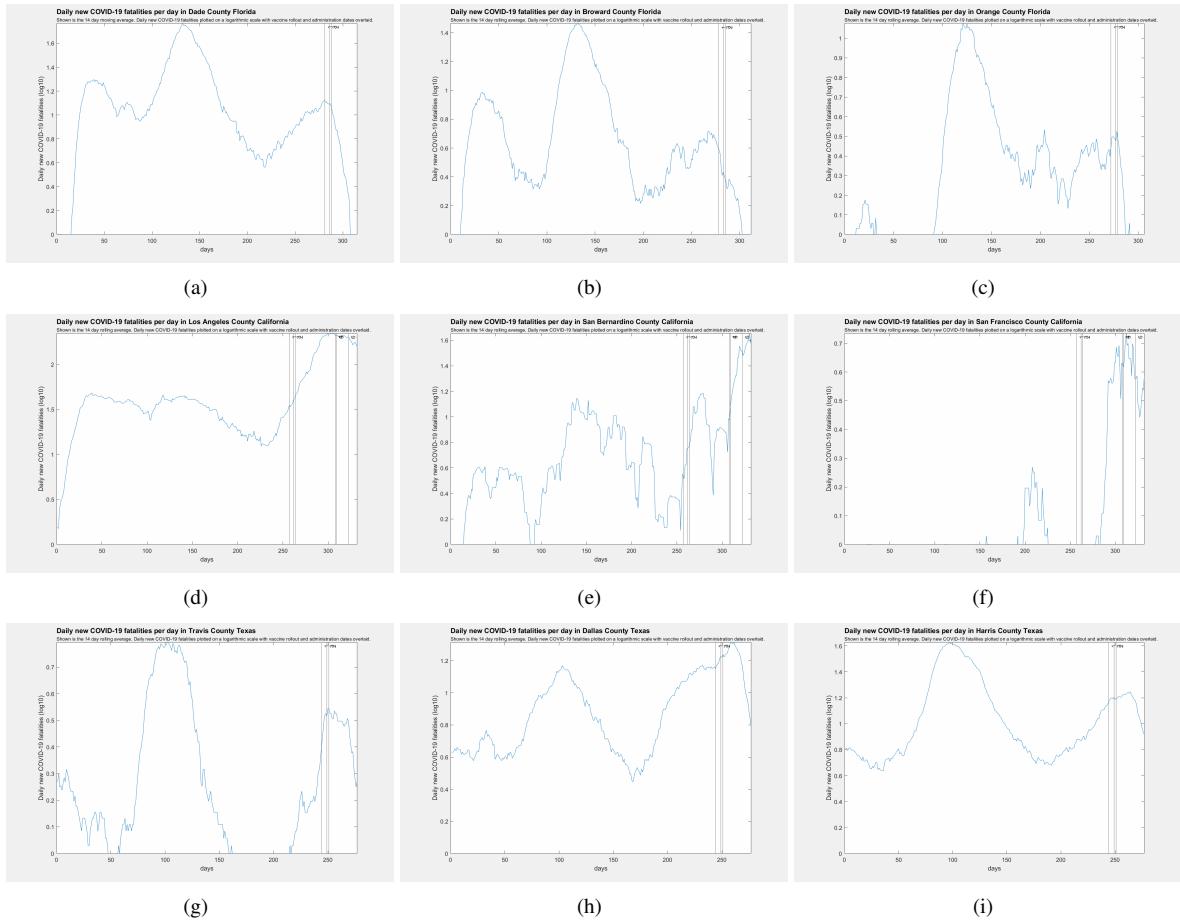


Figure 6: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

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

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

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

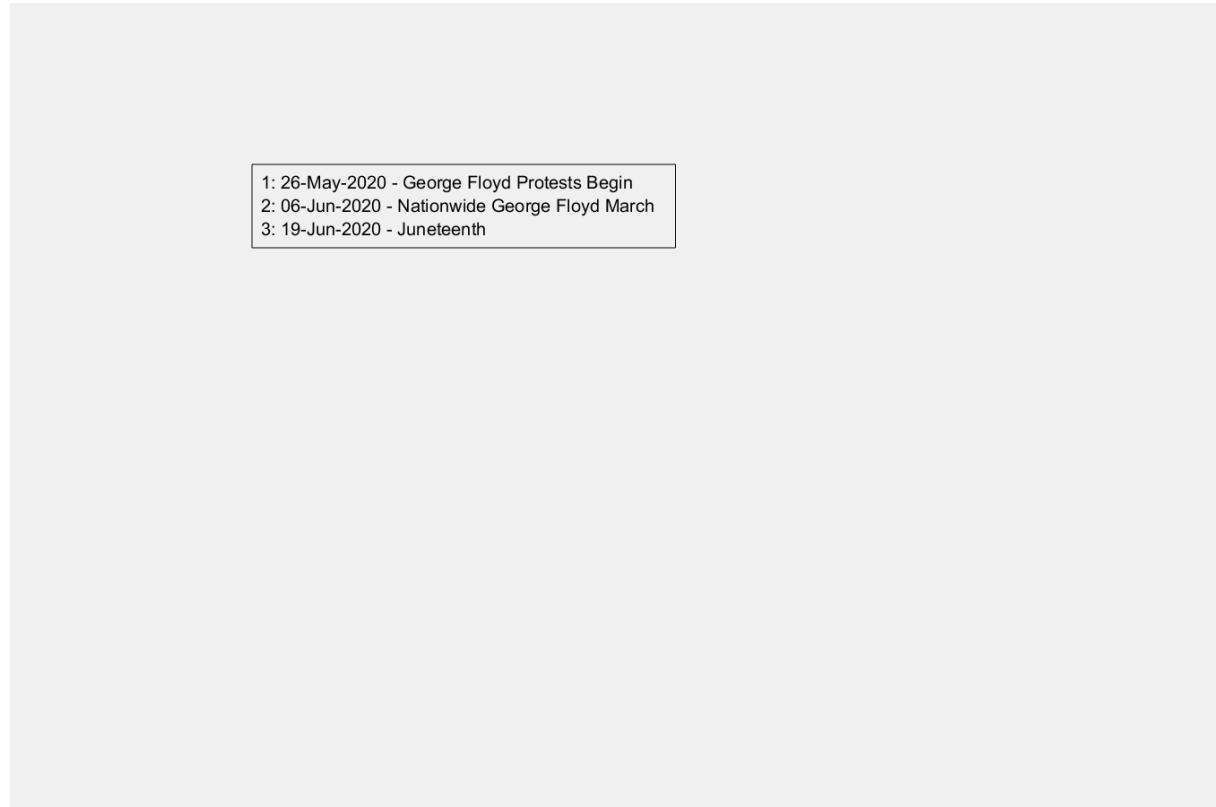


Figure 7

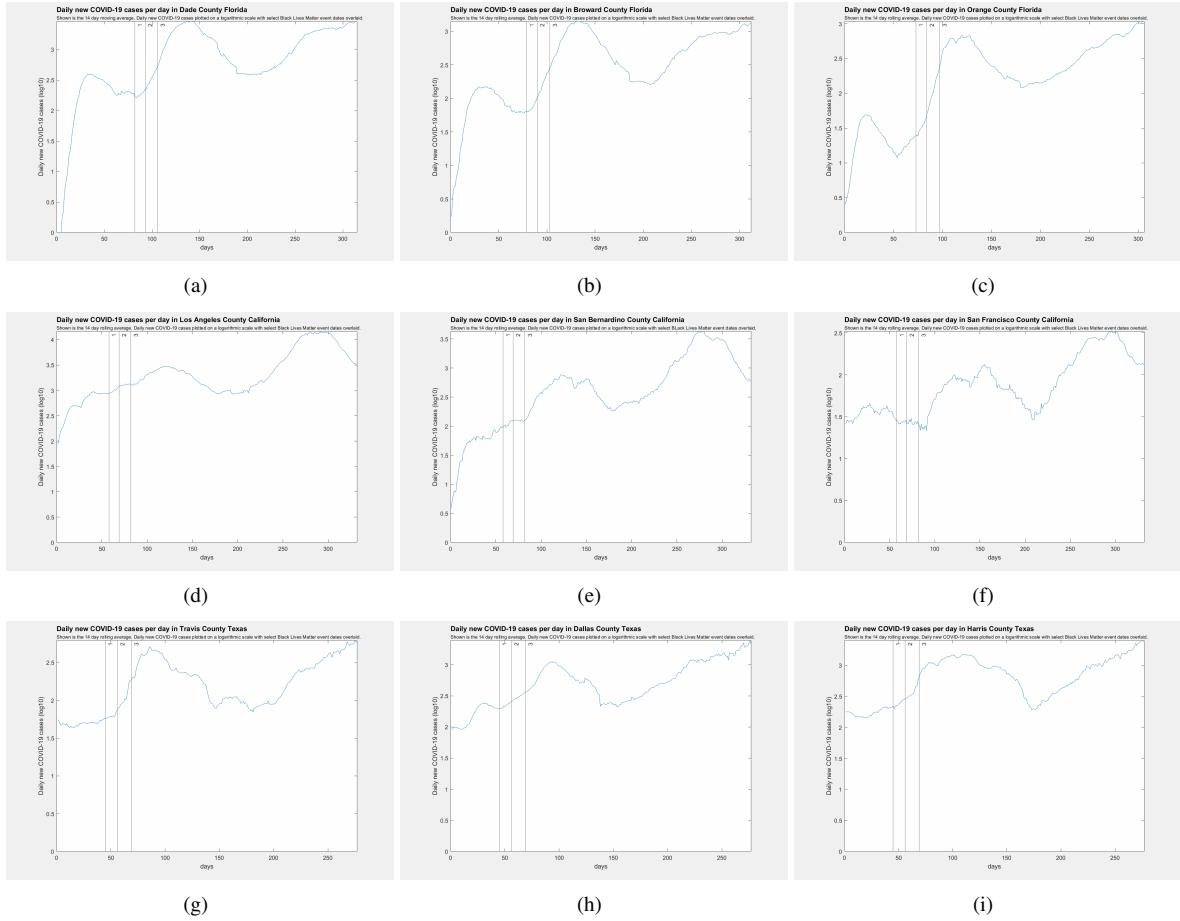


Figure 8: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

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

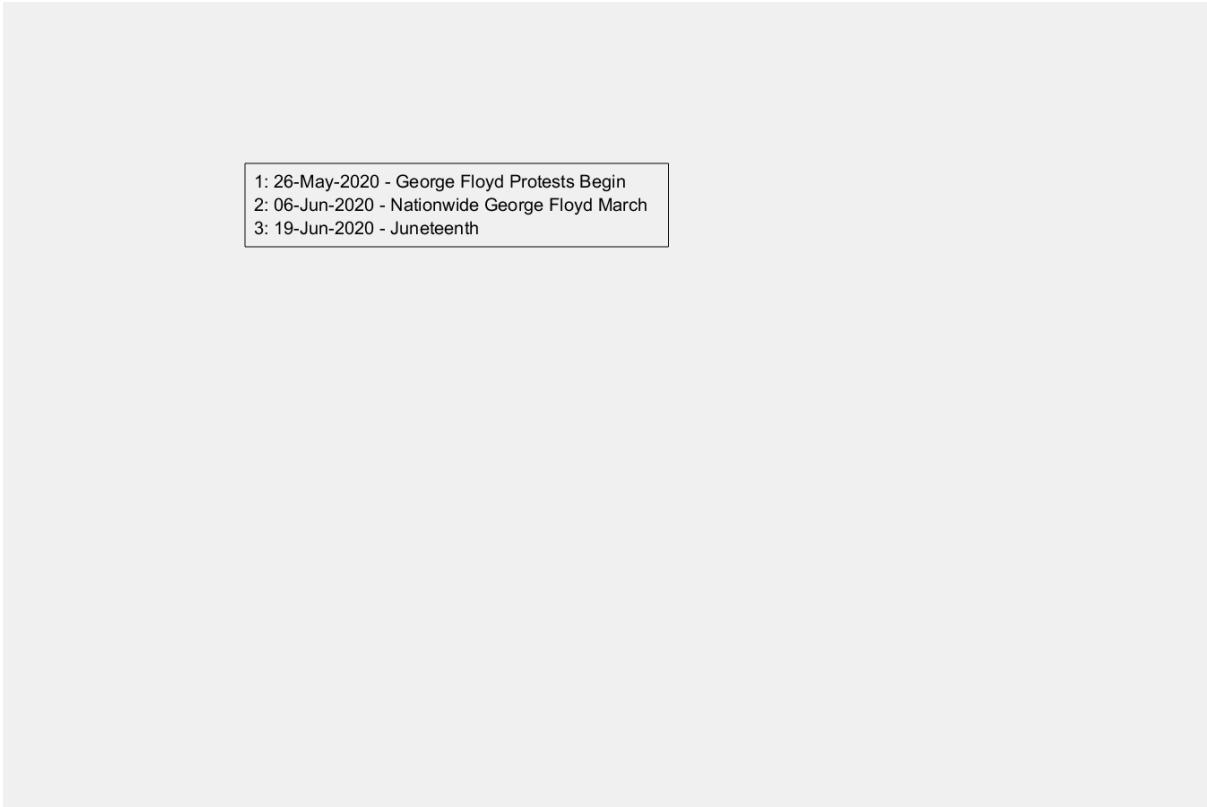


Figure 9

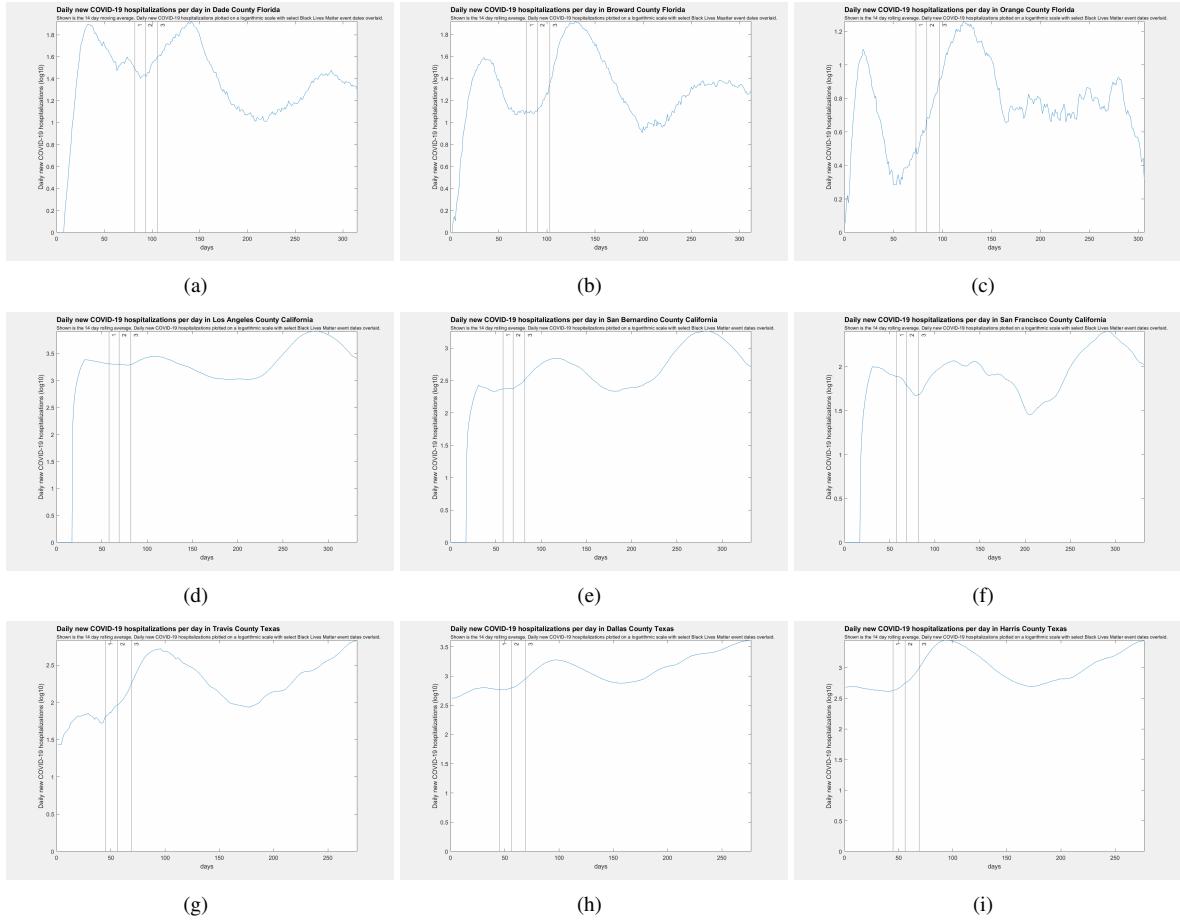


Figure 10: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

## 2.3 Black Lives Matter Events and COVID-19 Fatalities



Figure 11

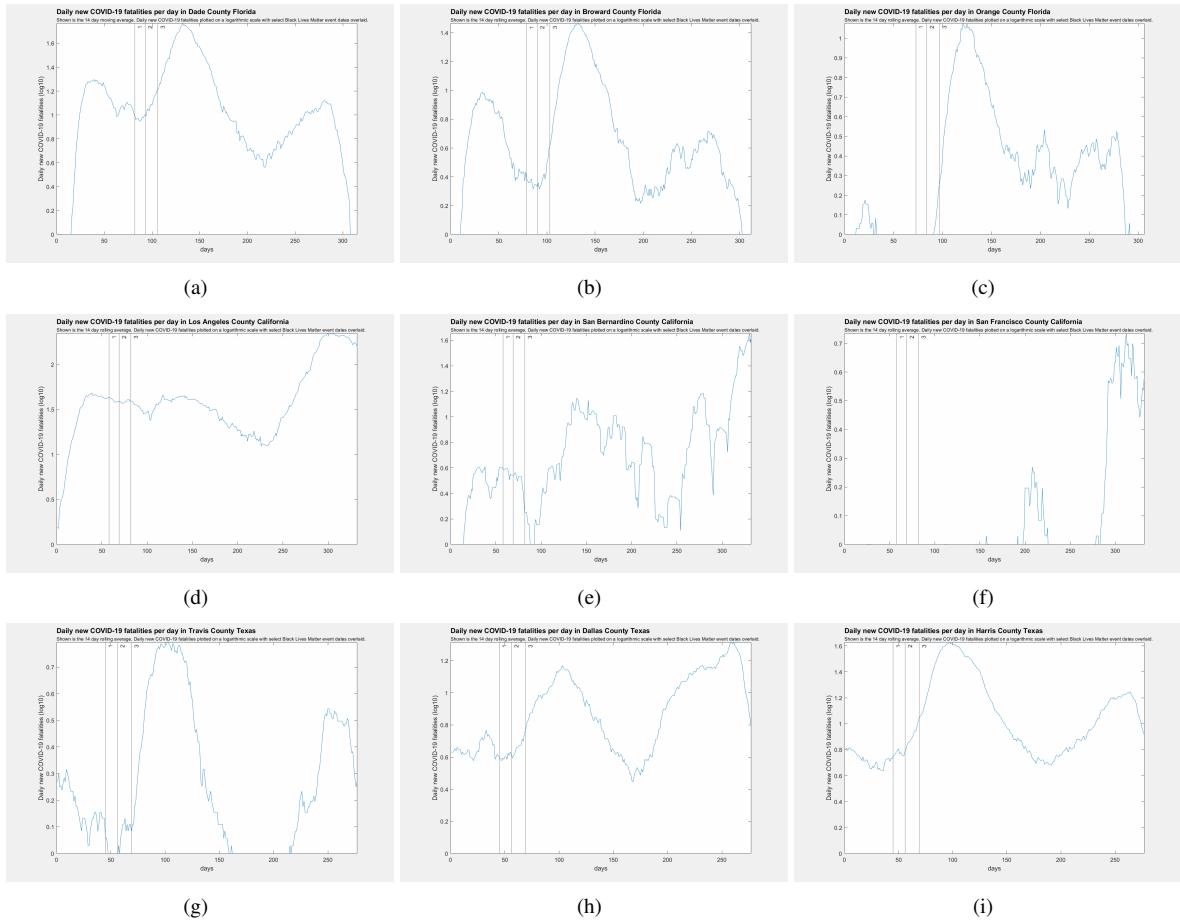


Figure 12: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

## 2.4 Black Lives Matter and COVID-19

## 3 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.

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

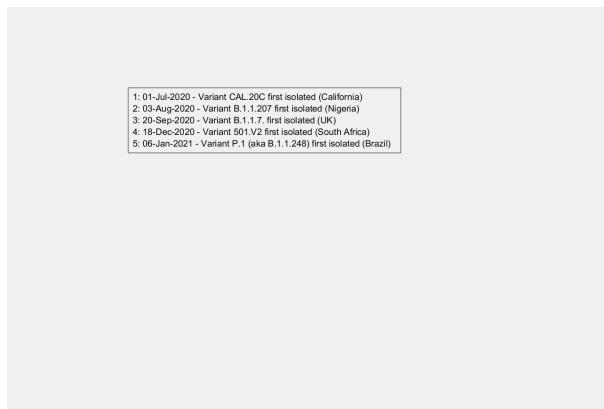


Figure 13: Listed above are five uniquely infectious variant strains of COVID-19, listed corresponding to the date in which they were first genetically sequenced and isolated in their respective region.

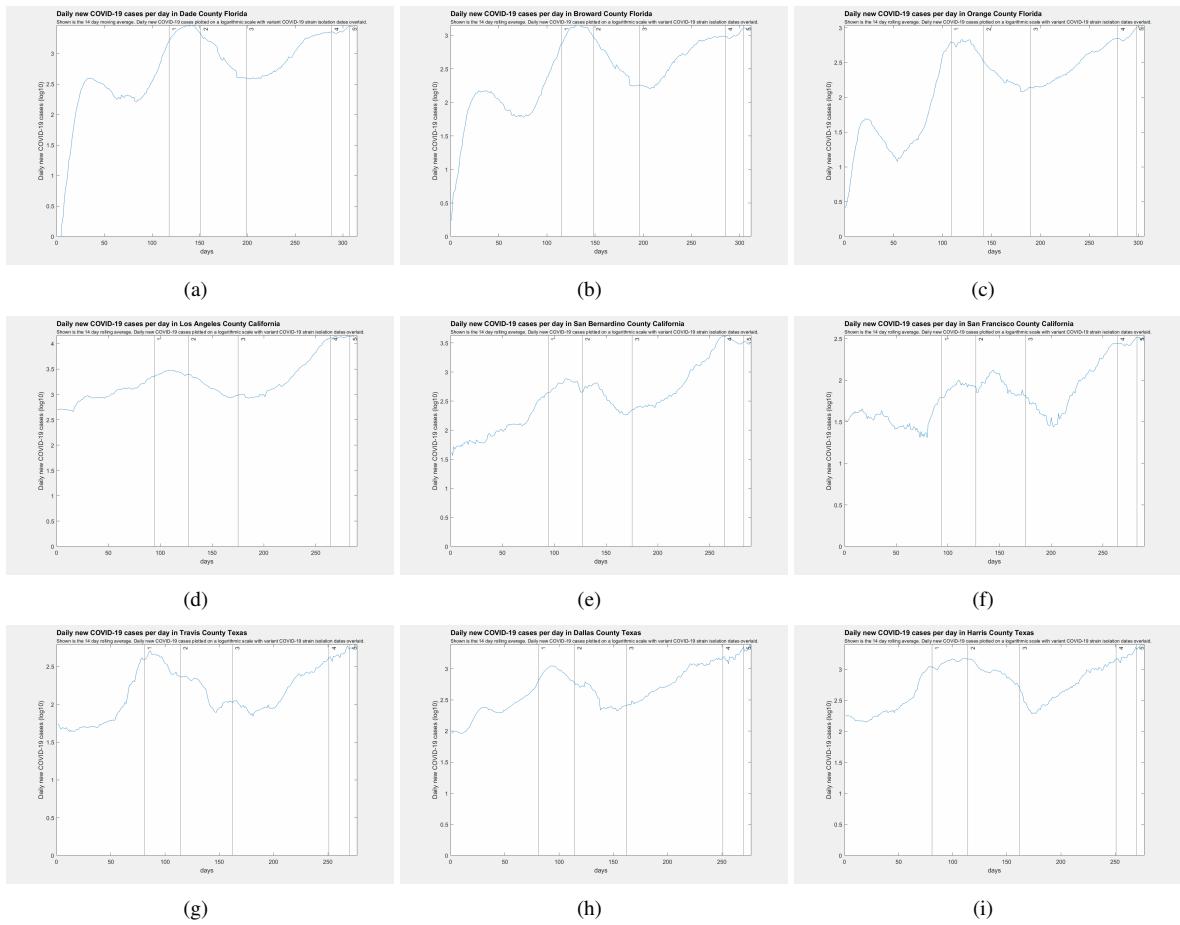


Figure 14: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

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

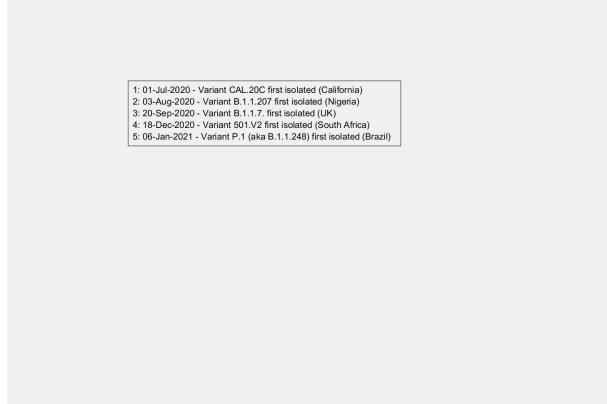


Figure 15: Listed above are five uniquely infectious variant strains of COVID-19, listed corresponding to the date in which they were first genetically sequenced and isolated in their respective region.

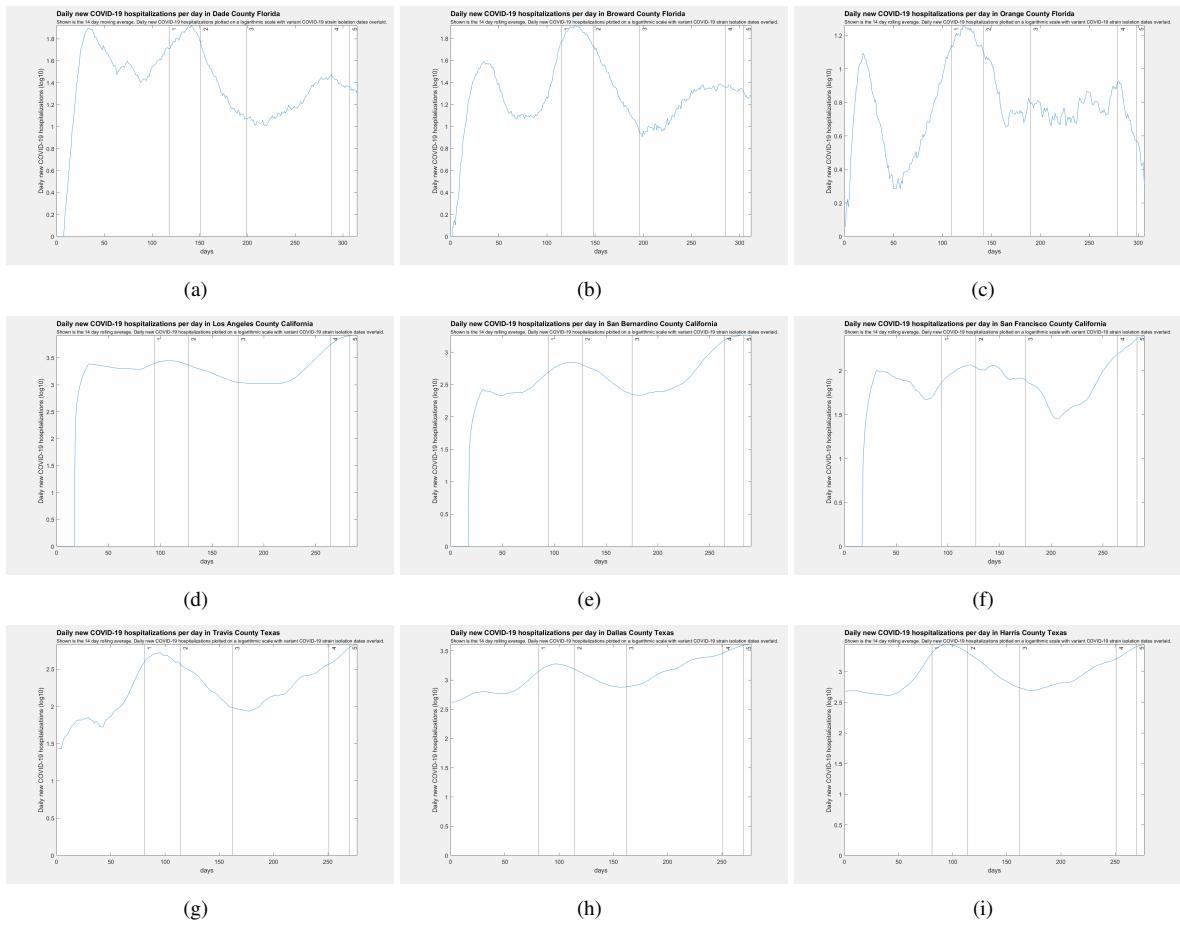


Figure 16: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

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

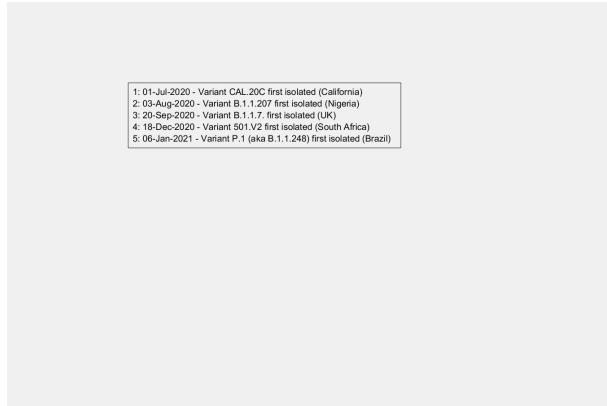


Figure 17: Listed above are five uniquely infectious variant strains of COVID-19, listed corresponding to the date in which they were first genetically sequenced and isolated in their respective region.

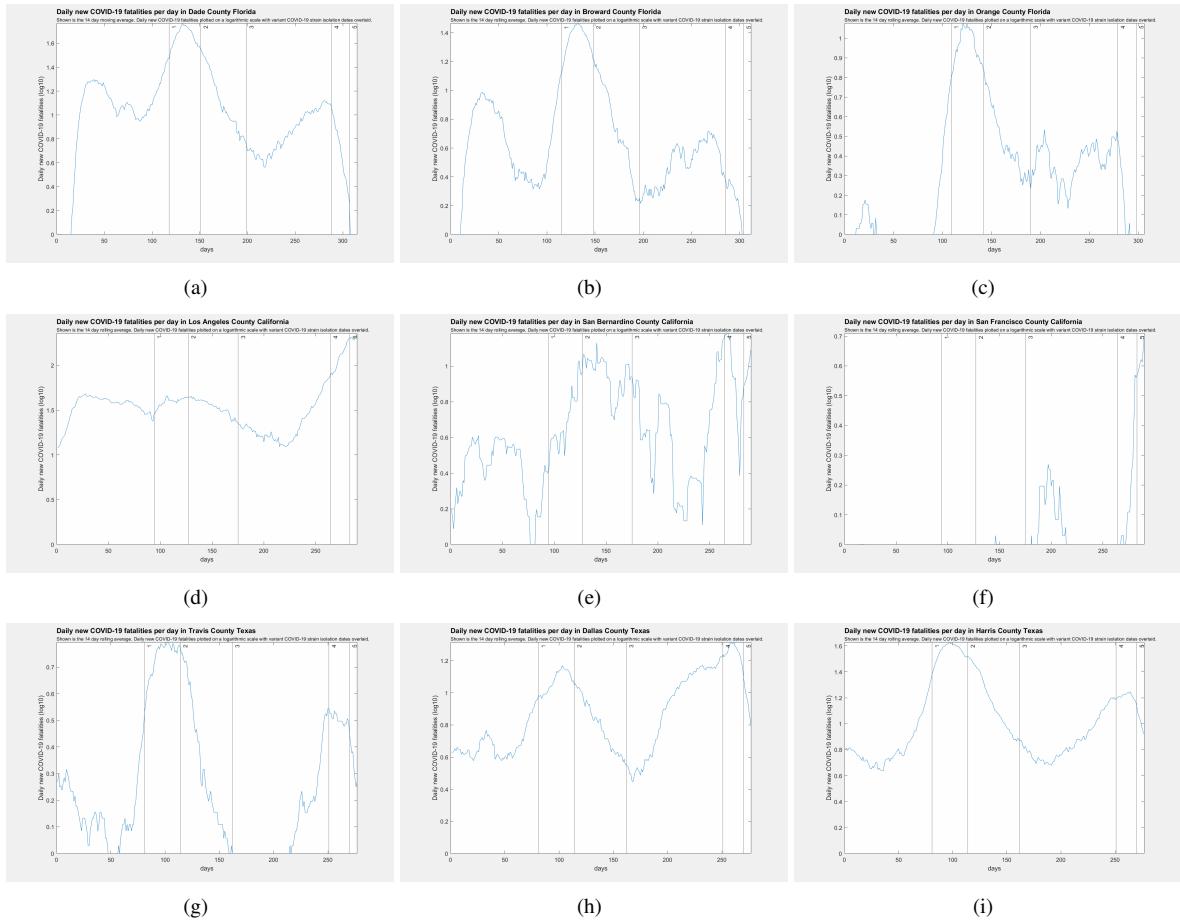


Figure 18: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

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

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

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

## **4 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.

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



Figure 19

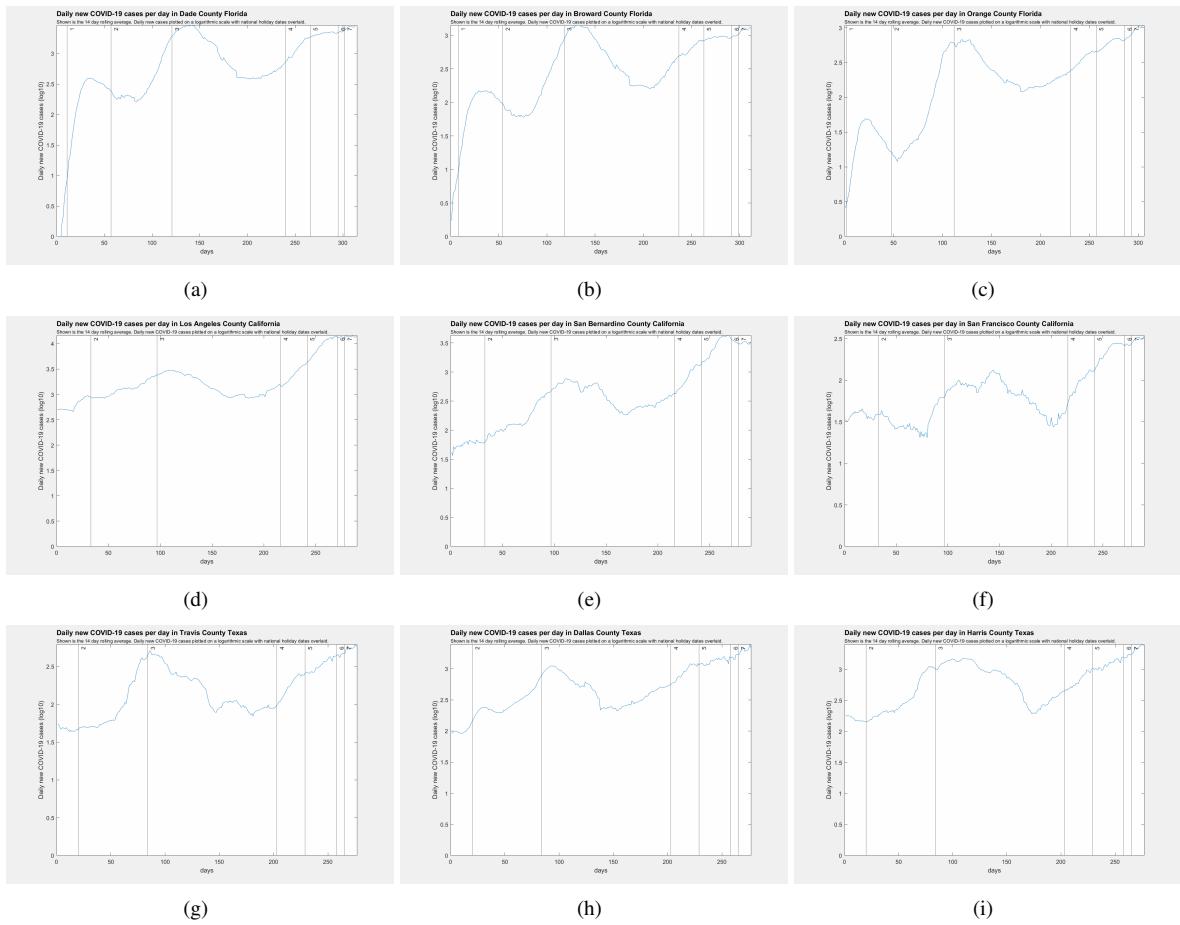


Figure 20: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

## 4.2 Holidays and Daily New COVID-19 Hospitalizations



Figure 21

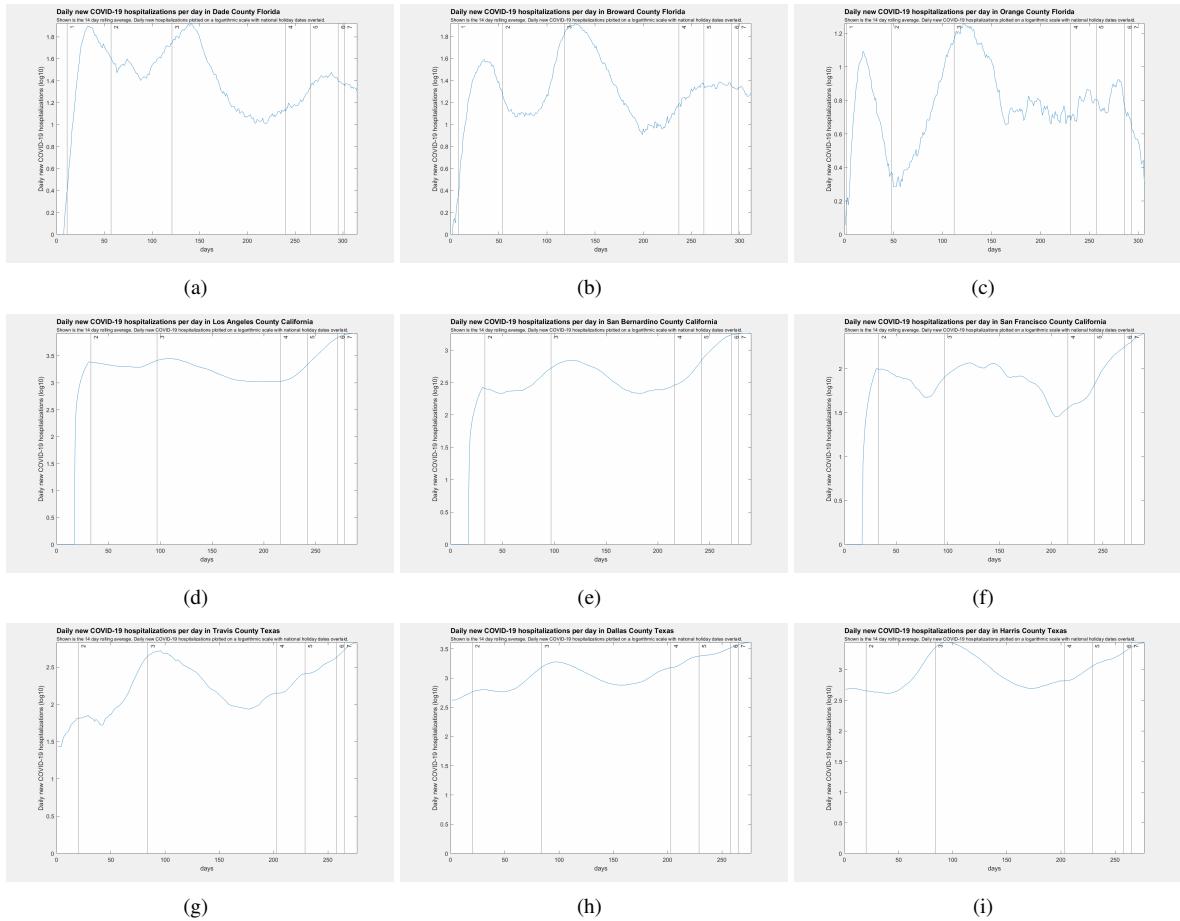


Figure 22: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

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



Figure 23

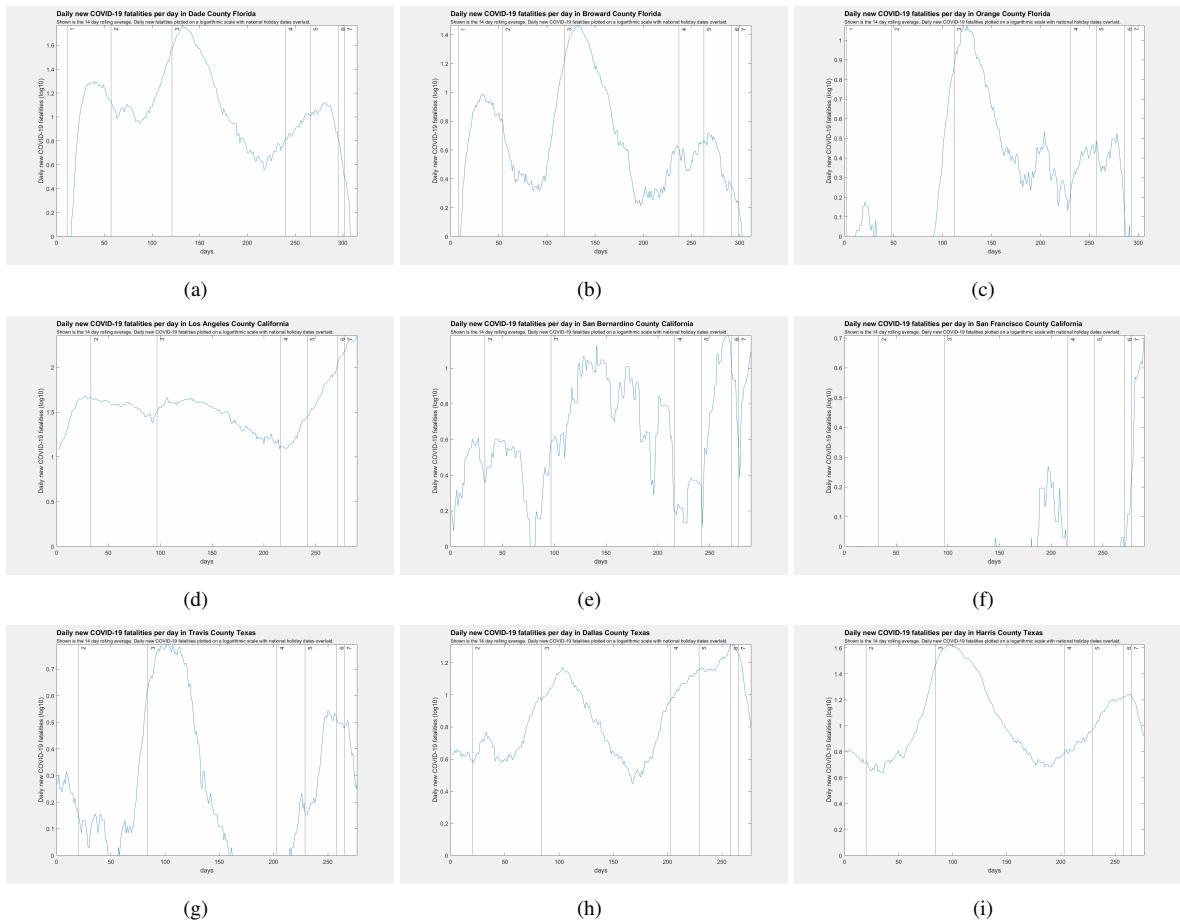


Figure 24: (a) Dade County, Florida (b) Broward County, Florida (c) Orange County, Florida (d) Los Angeles County, California (e) San Bernardino County California (f) San Francisco County California (g) Travis County, Texas (h) Dallas County, Texas (i) Harris County, Texas

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

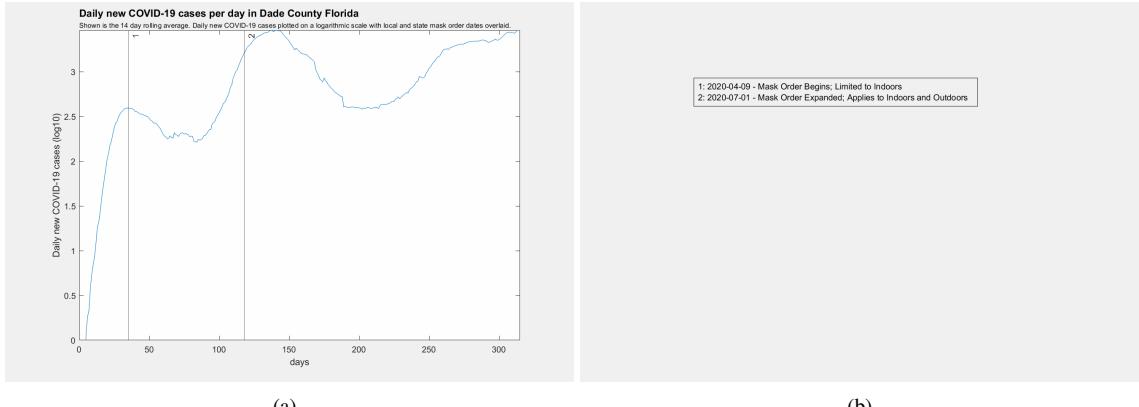
#### **4.5 The Impact of a National Holiday**

#### **4.6 Subsection**

### **5 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.

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

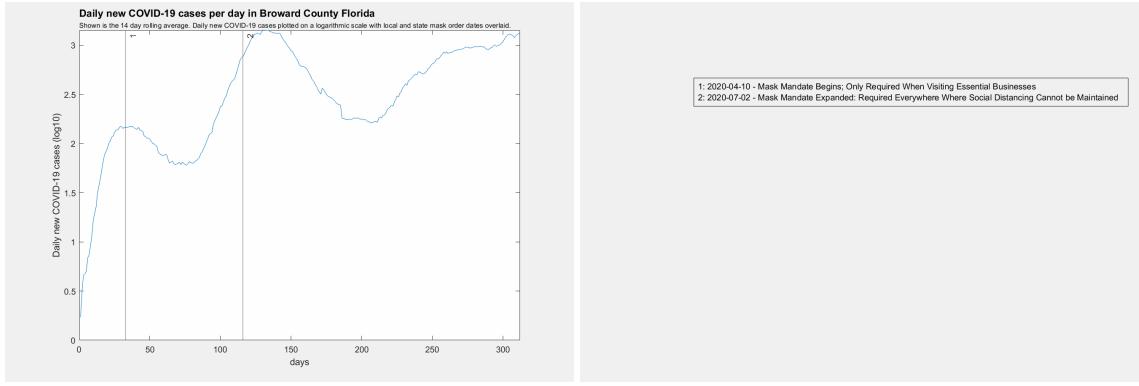


(a)

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

(b)

Figure 25: (a) blah (b) blah

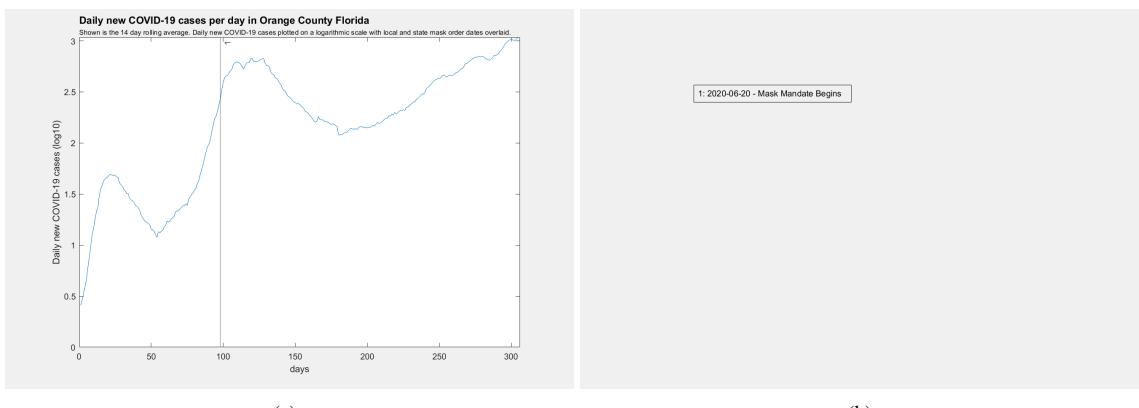


(a)

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 26: (a) blah (b) blah

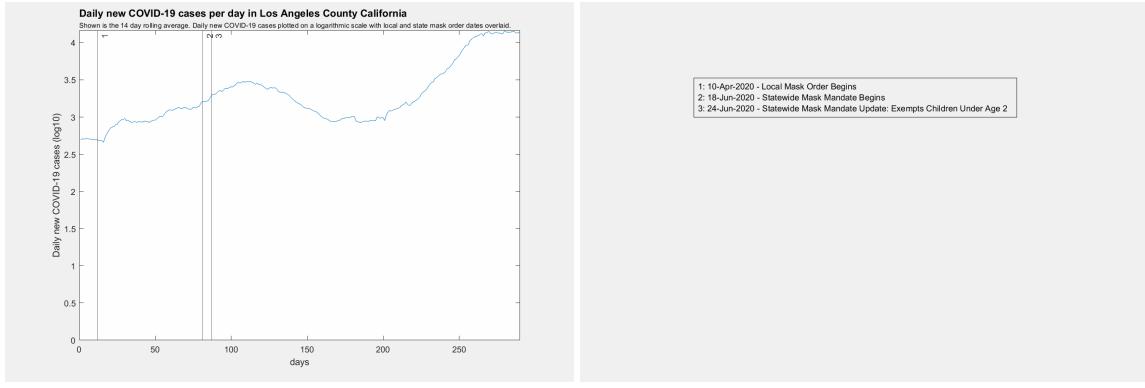


(a)

1: 2020-06-20 - Mask Mandate Begins

(b)

Figure 27: (a) blah (b) blah

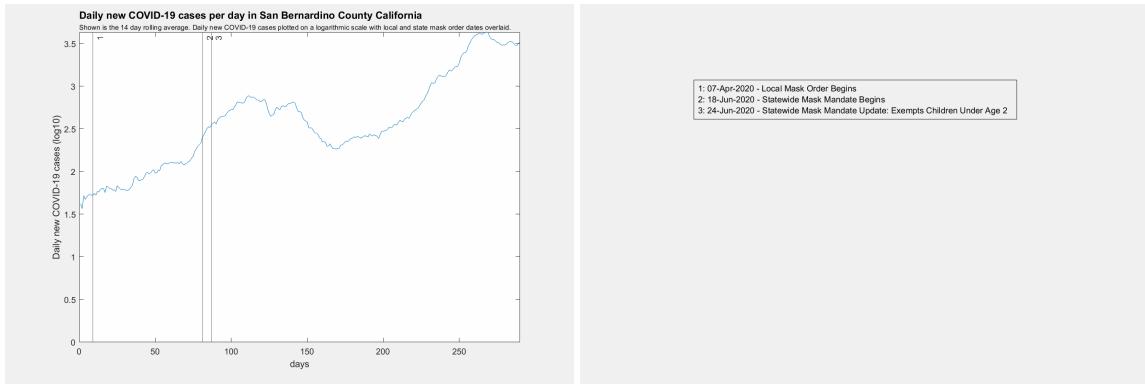


(a)

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 28: (a) blah (b) blah

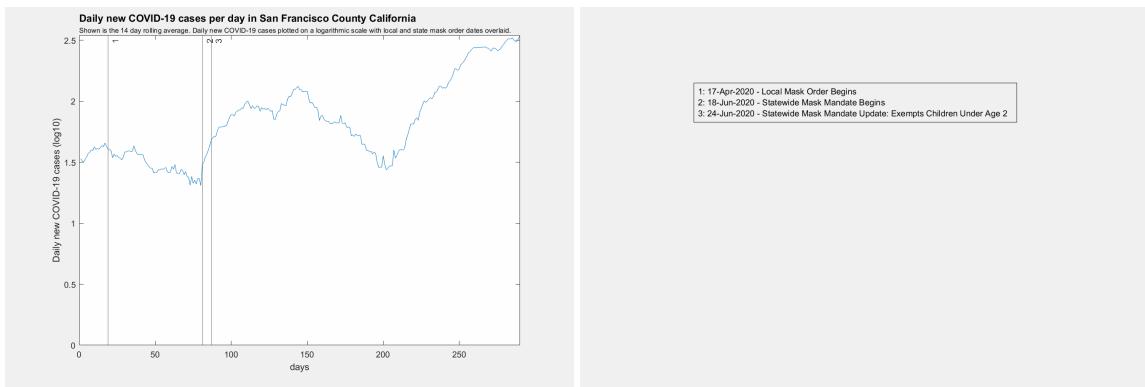


(a)

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 29: (a) blah (b) blah

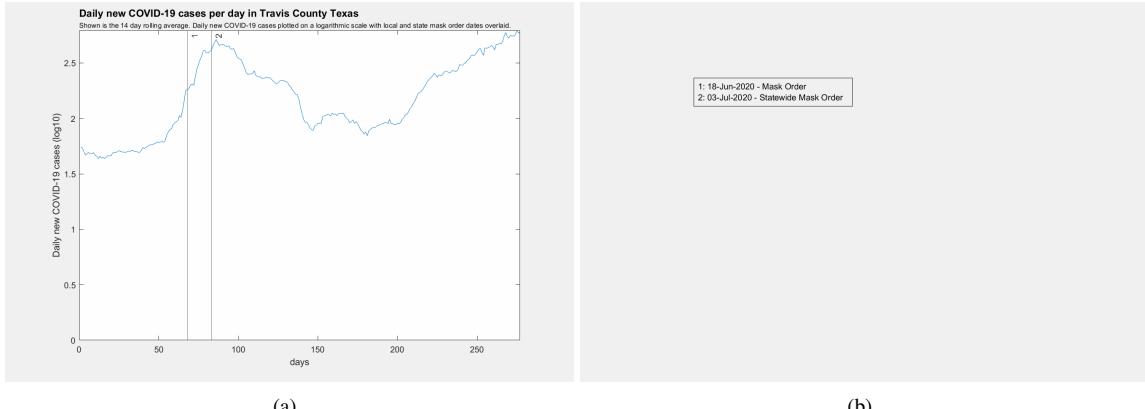


(a)

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 30: (a) blah (b) blah

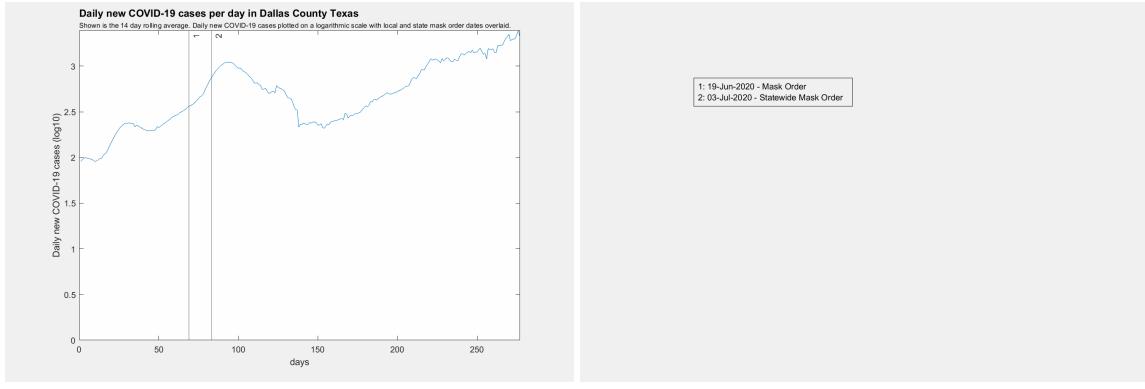


(a)

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

(b)

Figure 31: (a) blah (b) blah

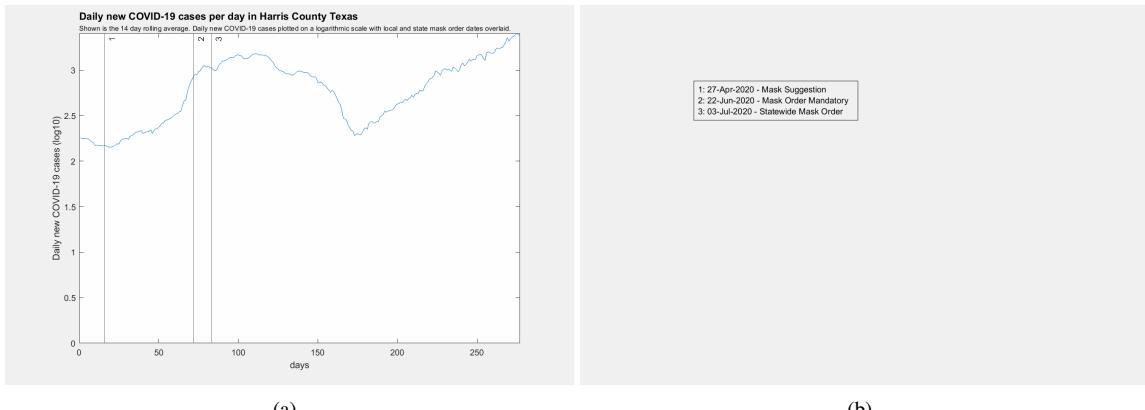


(a)

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

(b)

Figure 32: (a) blah (b) blah



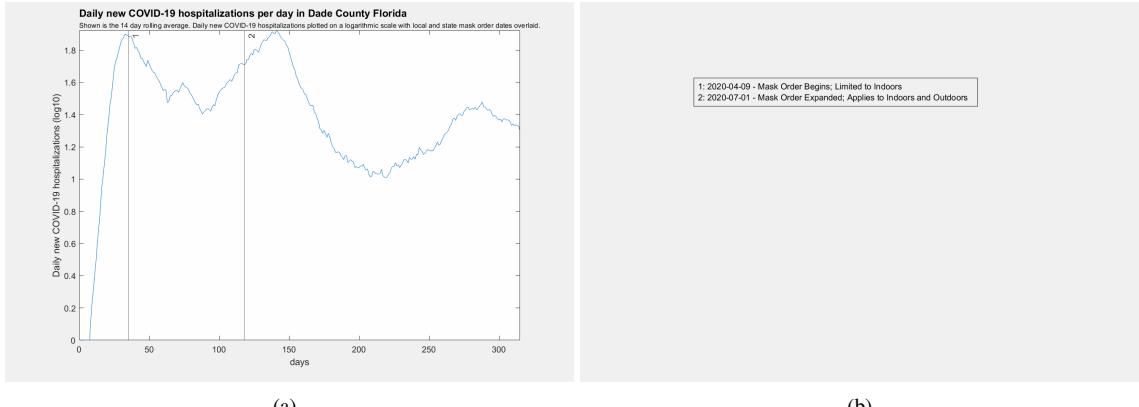
(a)

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

(b)

Figure 33: (a) blah (b) blah

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

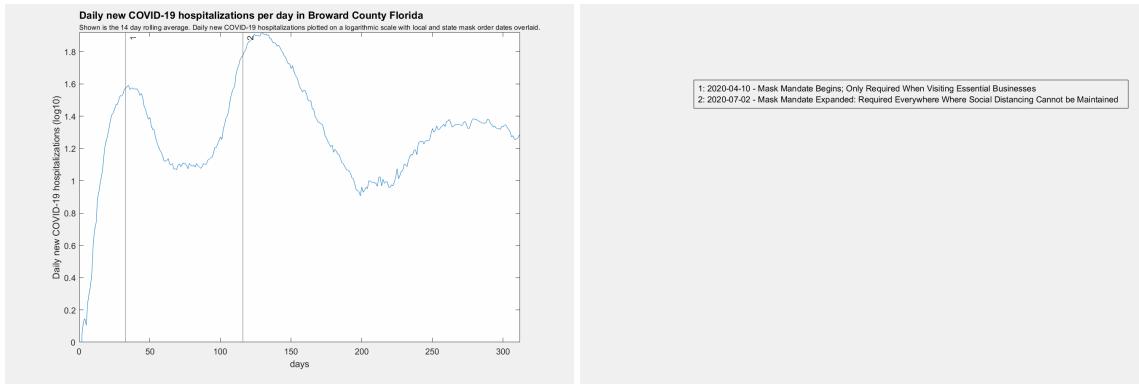


(a)

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

(b)

Figure 34: (a) blah (b) blah

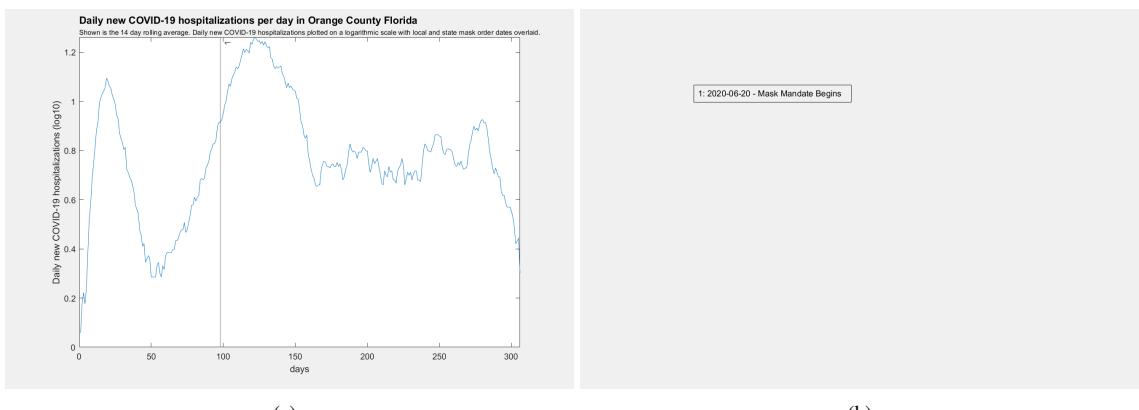


(a)

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 35: (a) blah (b) blah

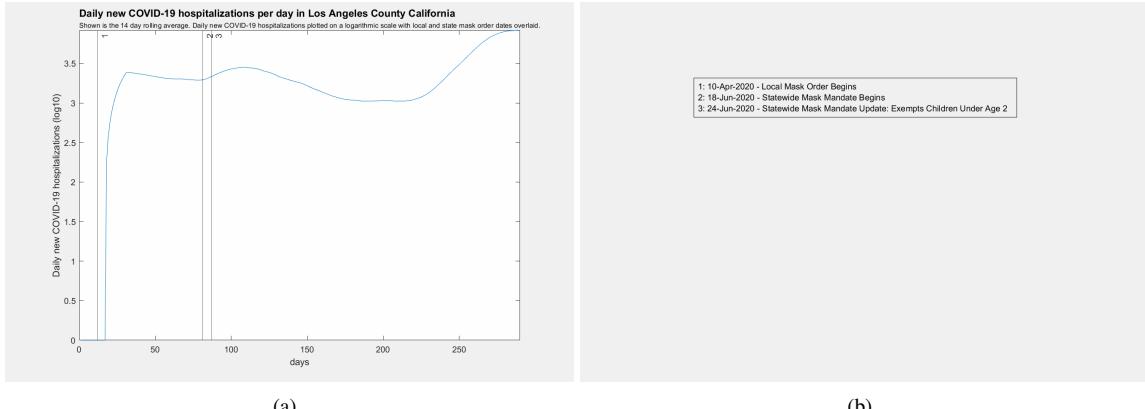


(a)

1: 2020-09-20 - Mask Mandate Begins

(b)

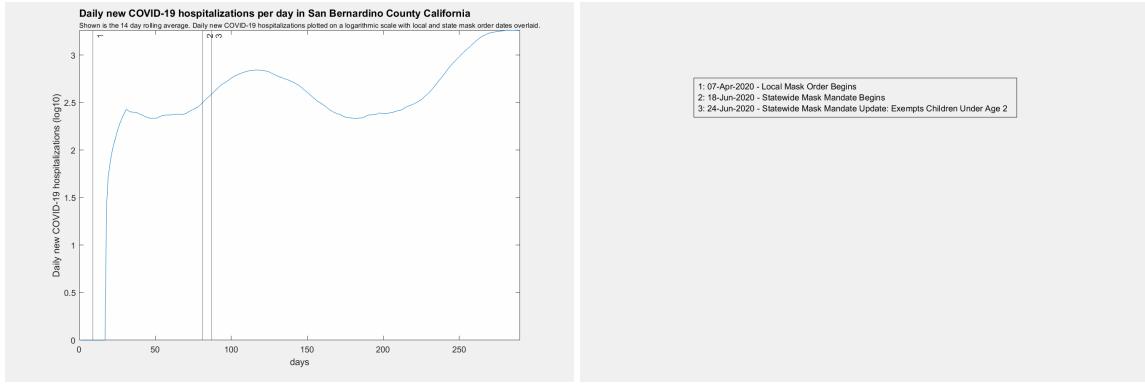
Figure 36: (a) blah (b) blah



(a)

(b)

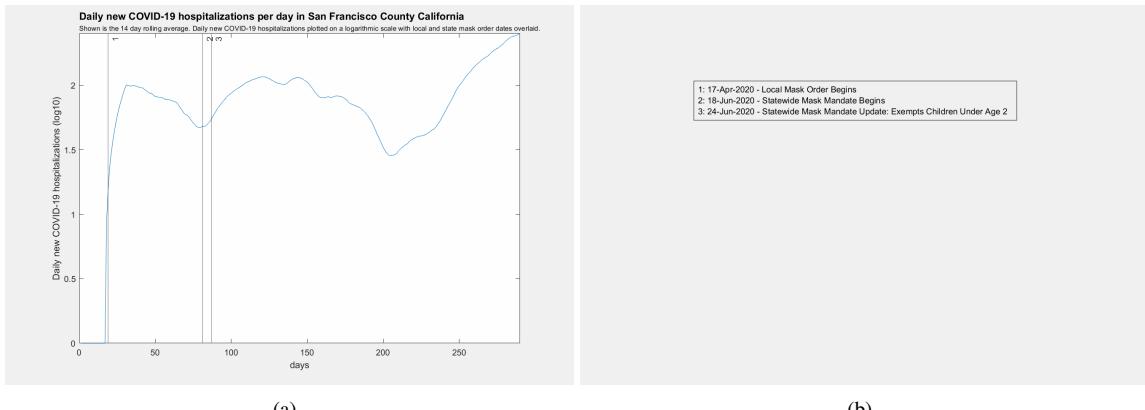
Figure 37: (a) blah (b) blah



(a)

(b)

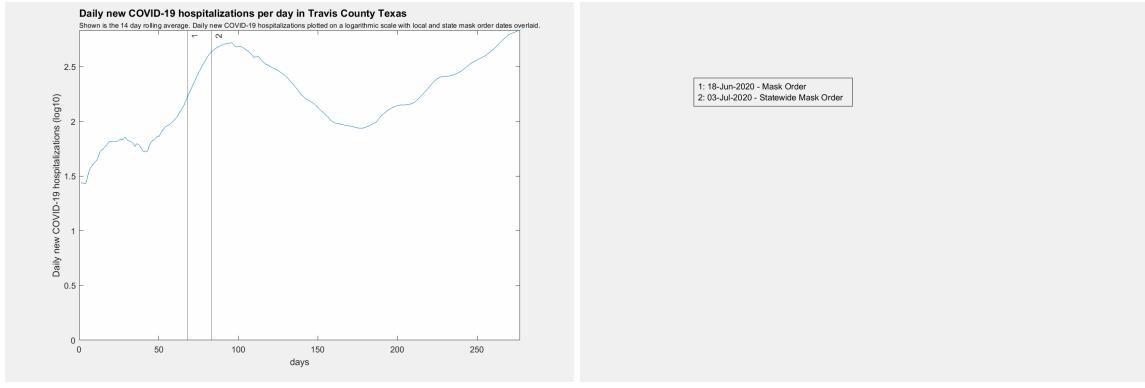
Figure 38: (a) blah (b) blah



(a)

(b)

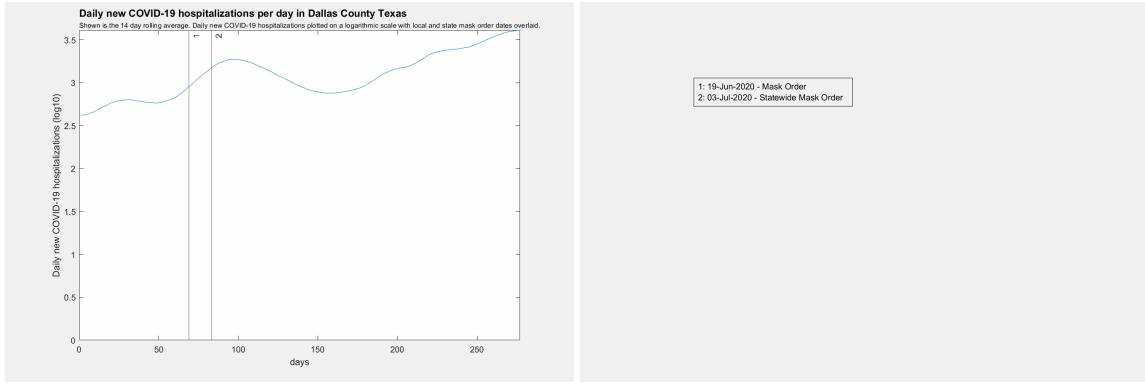
Figure 39: (a) blah (b) blah



(a)

(b)

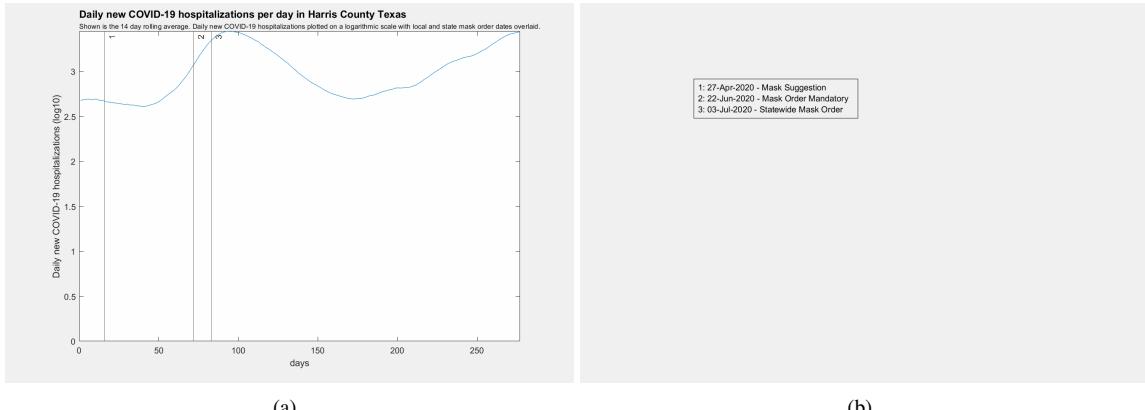
Figure 40: (a) blah (b) blah



(a)

(b)

Figure 41: (a) blah (b) blah

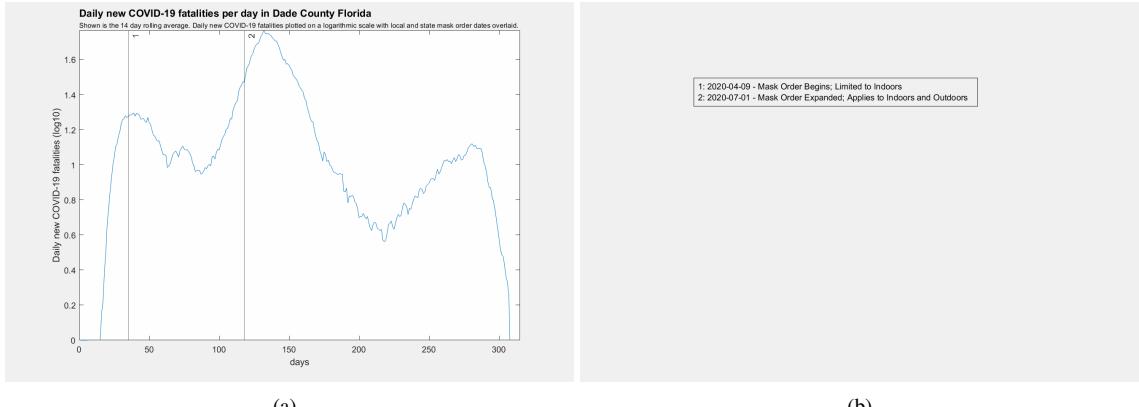


(a)

(b)

Figure 42: (a) blah (b) blah

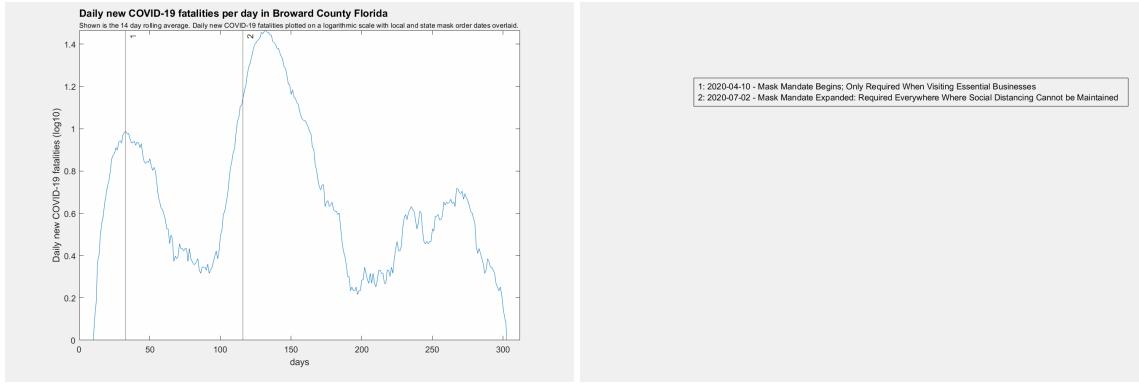
### **5.3 Mask Order Mandates and Daily New COVID-19 Cases**



(a)

(b)

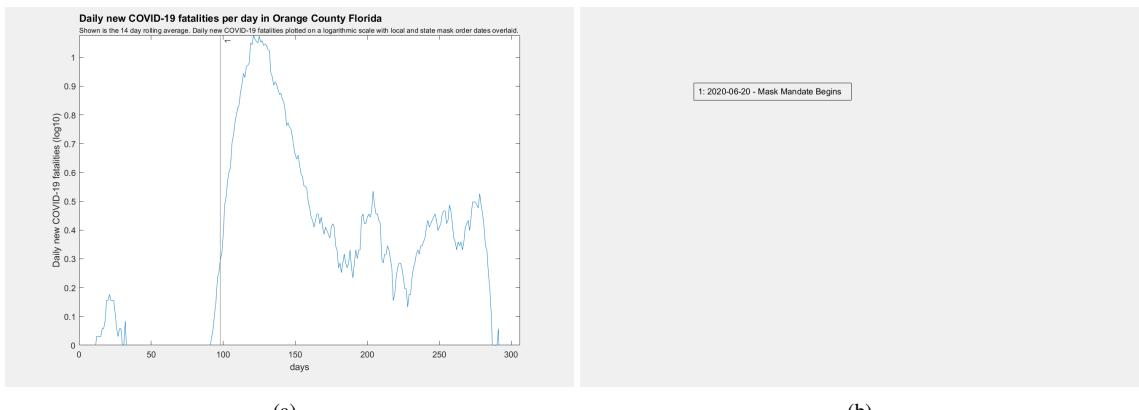
Figure 43: (a) blah (b) blah



(a)

(b)

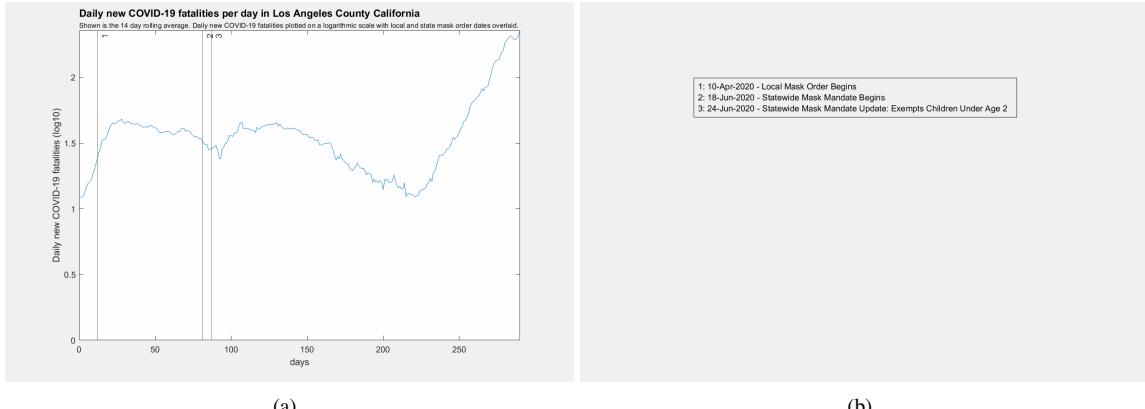
Figure 44: (a) blah (b) blah



(a)

(b)

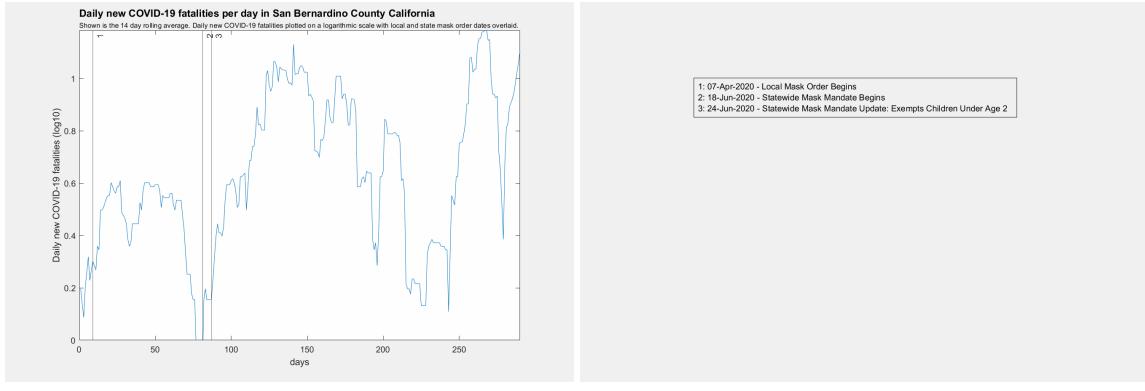
Figure 45: (a) blah (b) blah



(a)

(b)

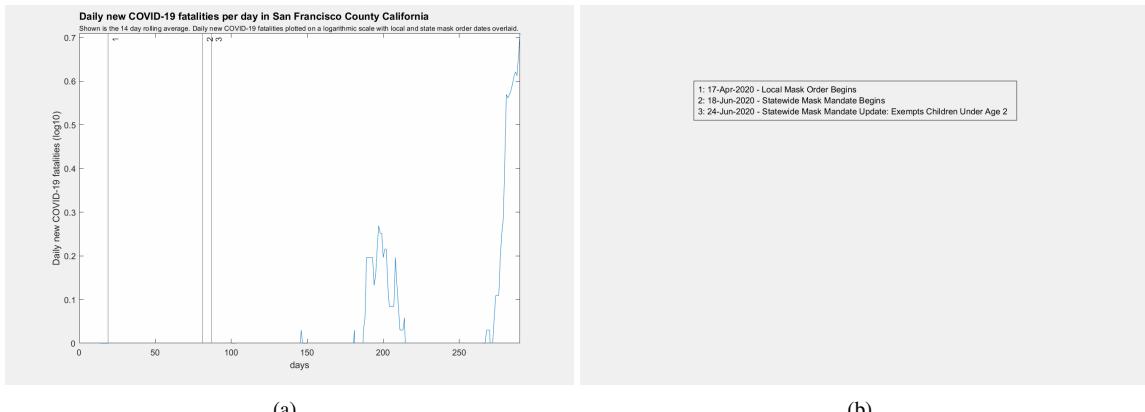
Figure 46: (a) blah (b) blah



(a)

(b)

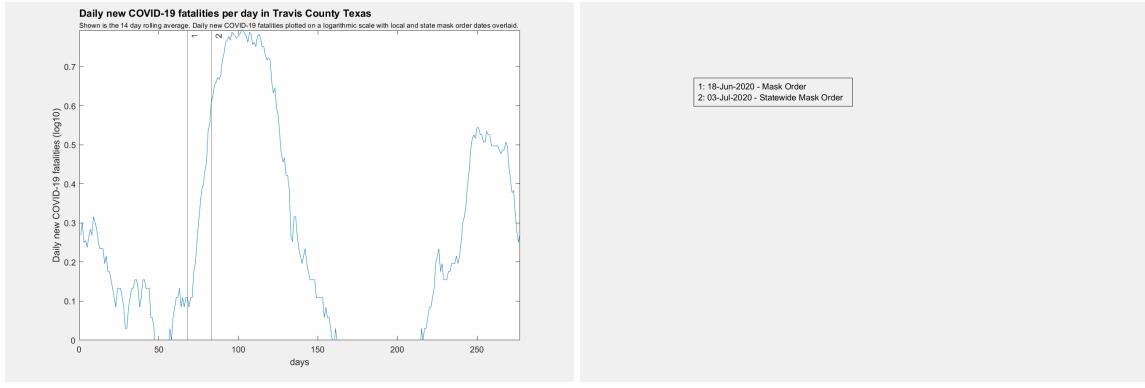
Figure 47: (a) blah (b) blah



(a)

(b)

Figure 48: (a) blah (b) blah

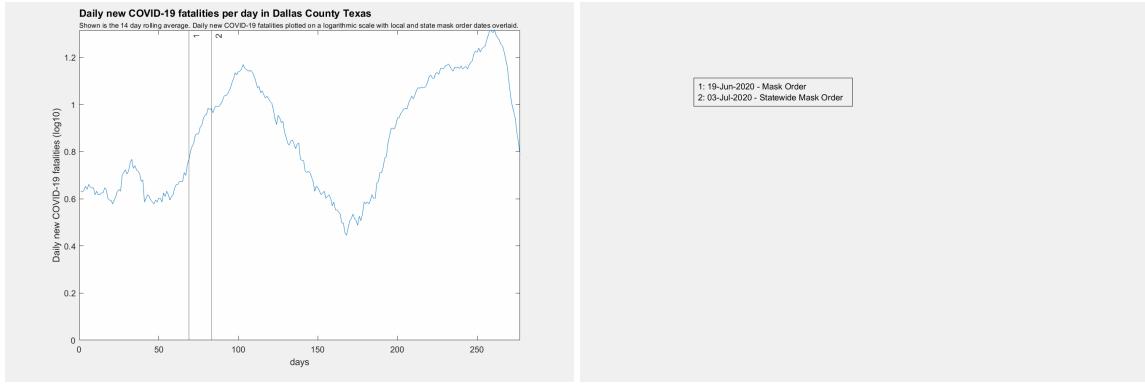


(a)

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

(b)

Figure 49: (a) blah (b) blah

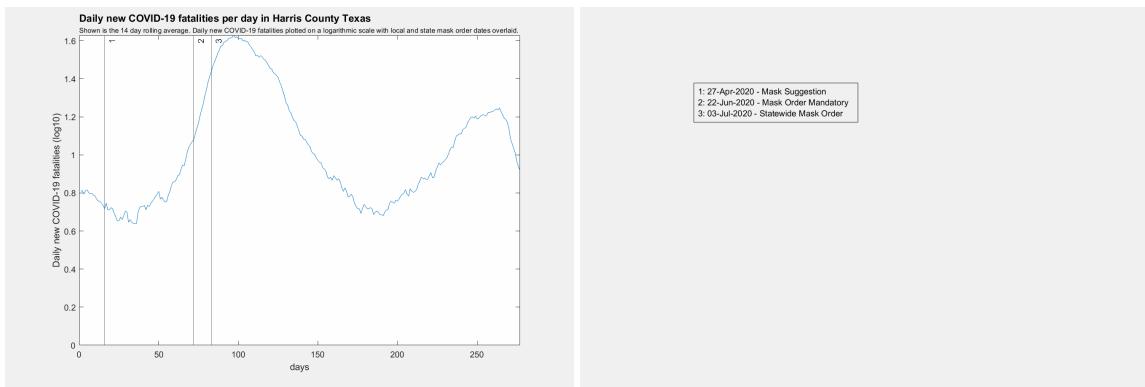


(a)

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

(b)

Figure 50: (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

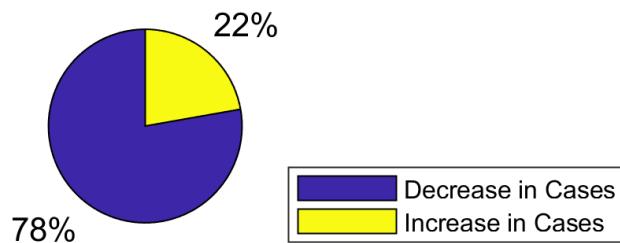
(b)

Figure 51: (a) blah (b) blah

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

**5.5 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**

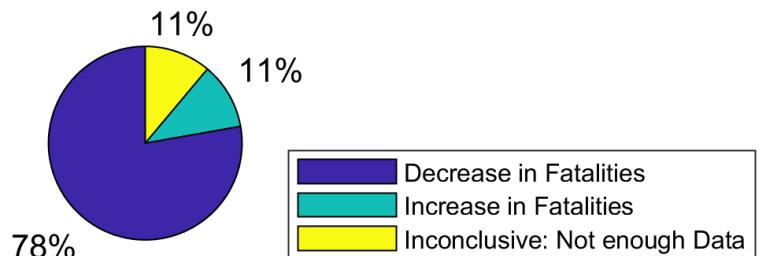
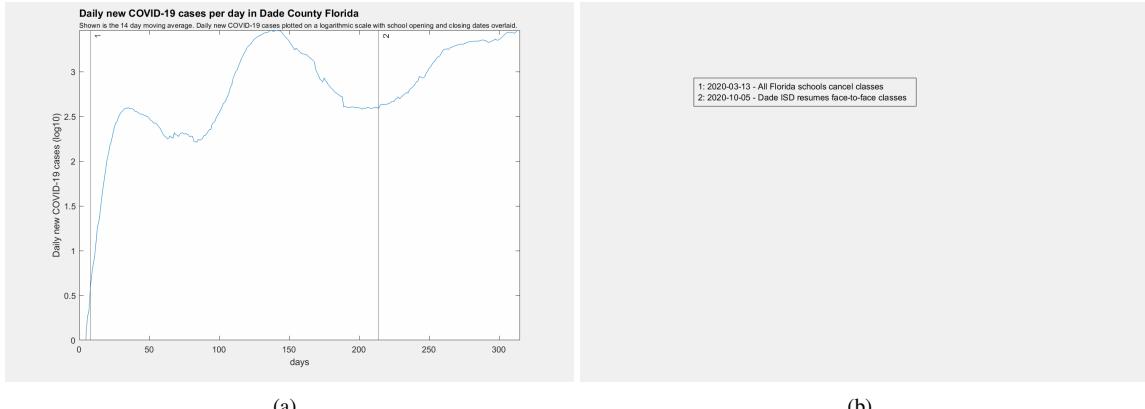


Figure 52: County-level COVID-19 case, hospitalization, and fatality statistics after local and state mask mandates are implemented (note: some counties do not have statewide mask mandates in place).

## **6 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.

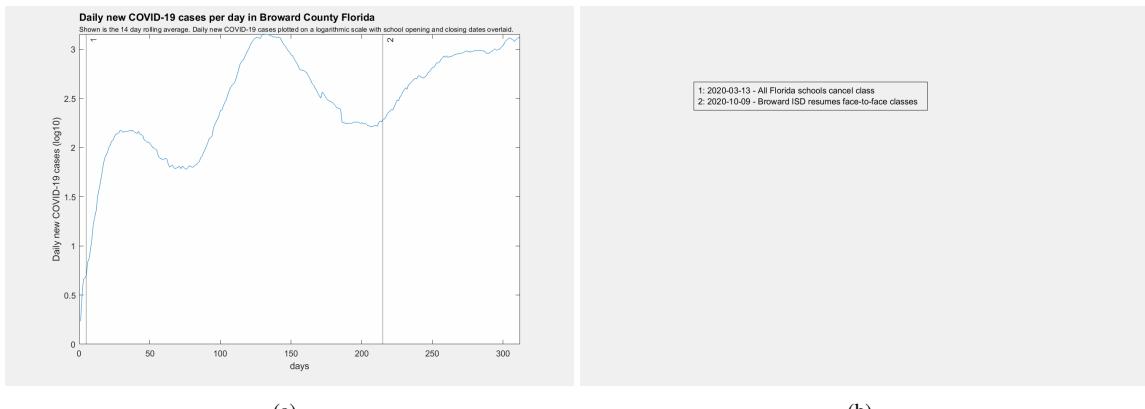
### **6.1 Schools and Daily New COVID-19 Cases**



1: 2020-03-13 - All Florida schools cancel classes  
2: 2020-10-05 - Dade ISD resumes face-to-face classes

(b)

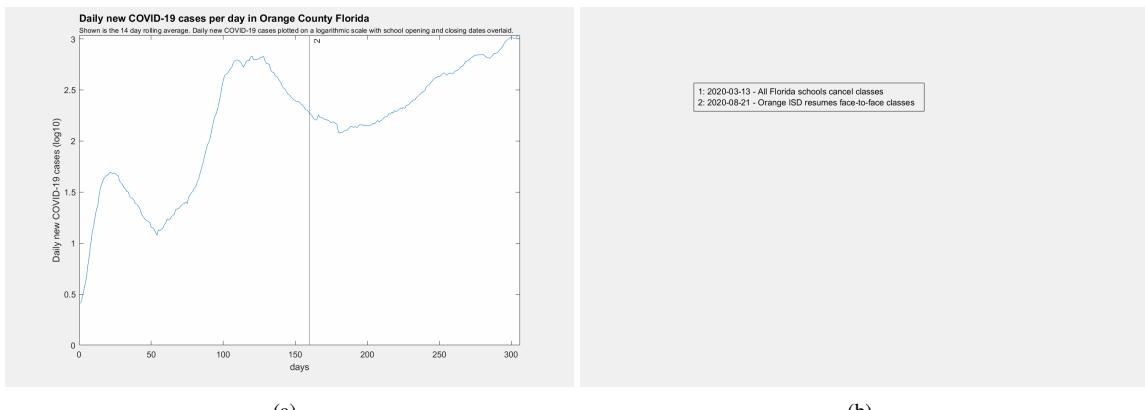
Figure 53: (a) blah (b) blah



1: 2020-03-13 - All Florida schools cancel class  
2: 2020-10-09 - Broward ISD resumes face-to-face classes

(b)

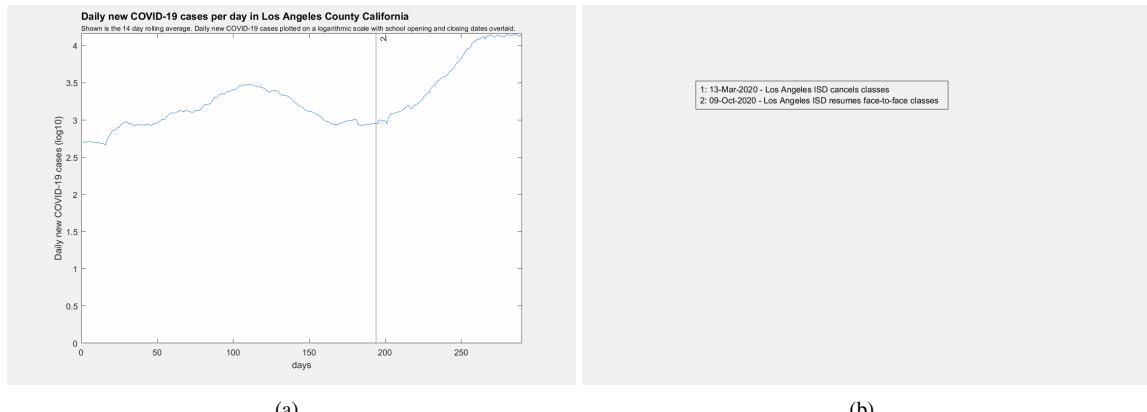
Figure 54: (a) blah (b) blah



1: 2020-03-13 - All Florida schools cancel classes  
2: 2020-08-21 - Orange ISD resumes face-to-face classes

(b)

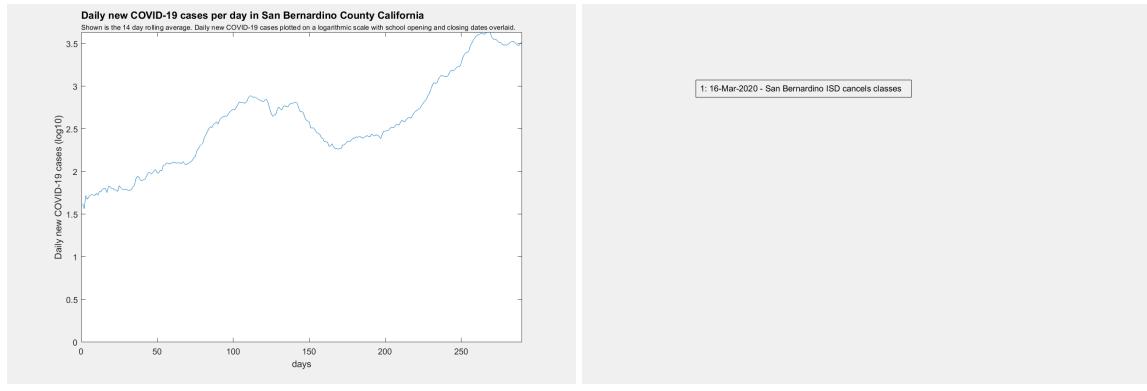
Figure 55: (a) blah (b) blah



(a)

(b)

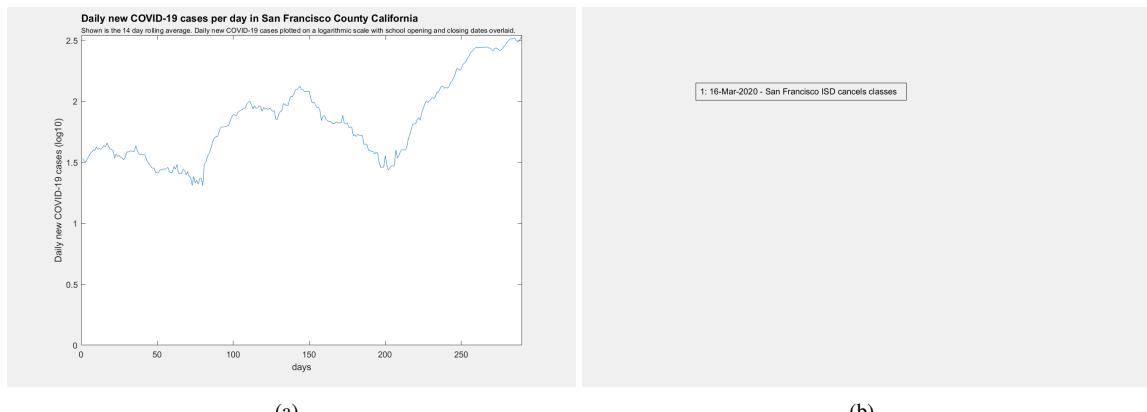
Figure 56: (a) blah (b) blah



(a)

(b)

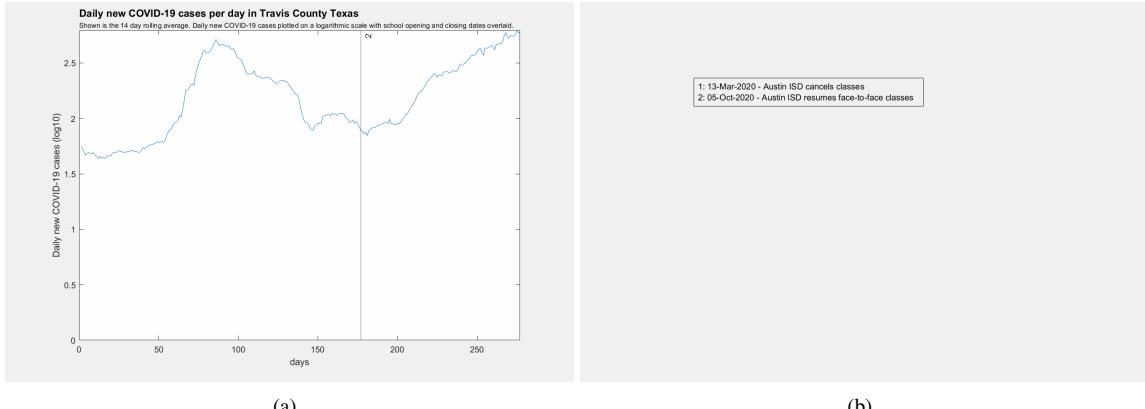
Figure 57: (a) blah (b) blah



(a)

(b)

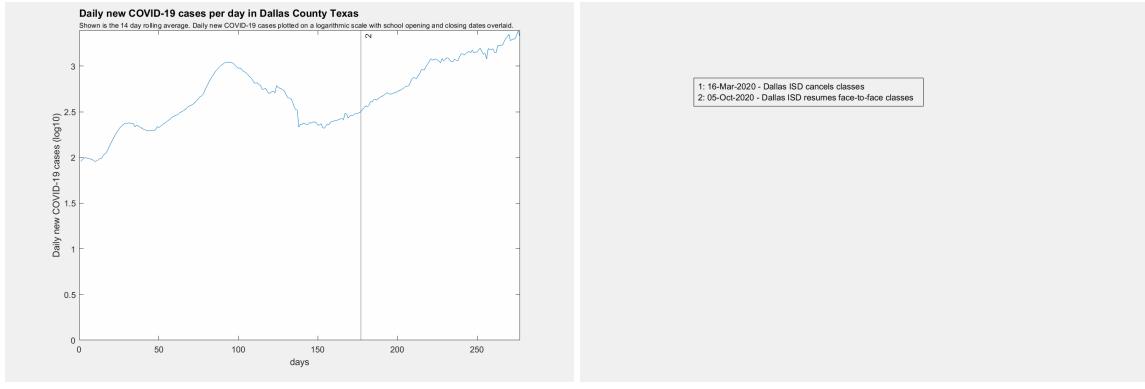
Figure 58: (a) blah (b) blah



(a)

(b)

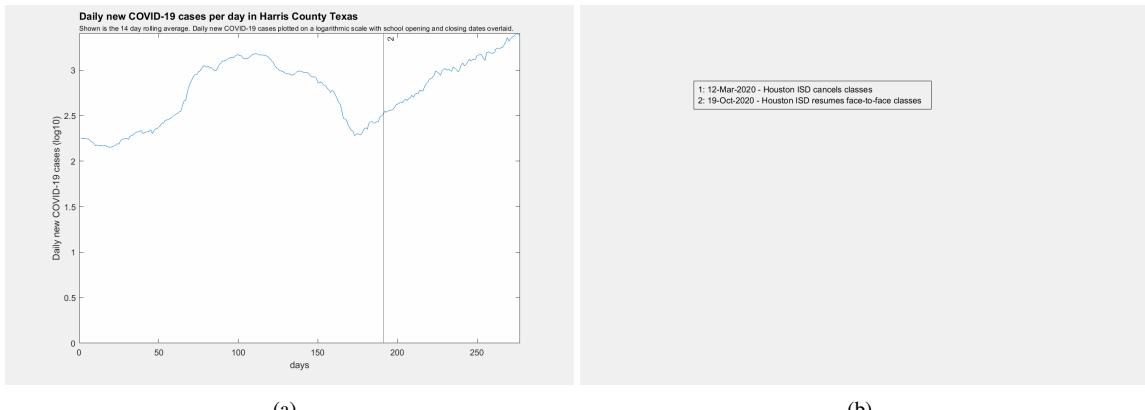
Figure 59: (a) blah (b) blah



(a)

(b)

Figure 60: (a) blah (b) blah

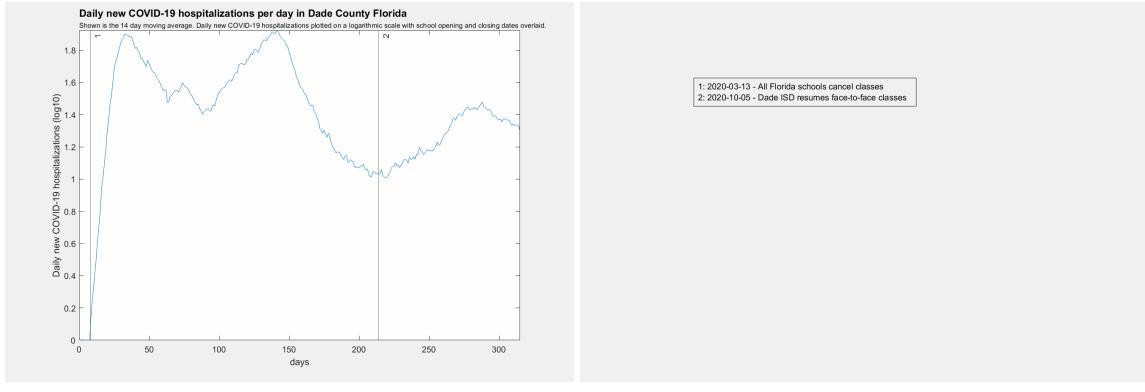


(a)

(b)

Figure 61: (a) blah (b) blah

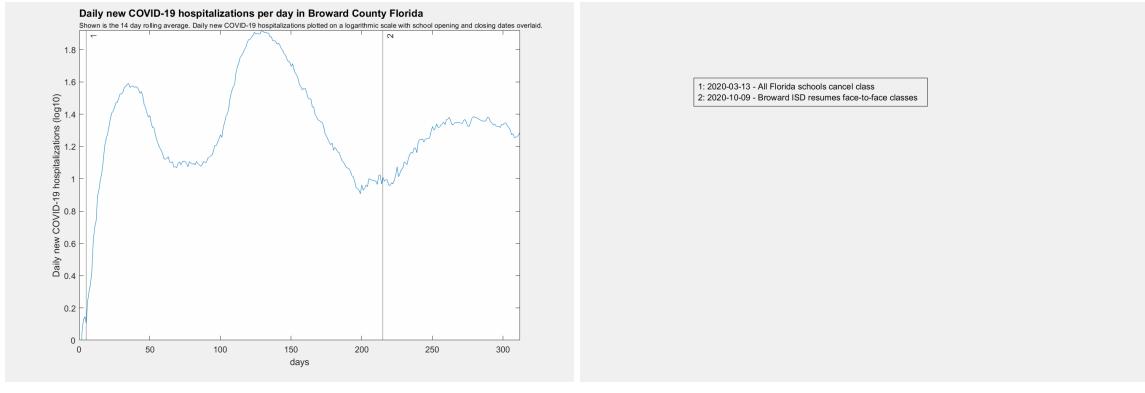
## **6.2 Schools and Daily New COVID-19 Hospitalizations**



(a)

(b)

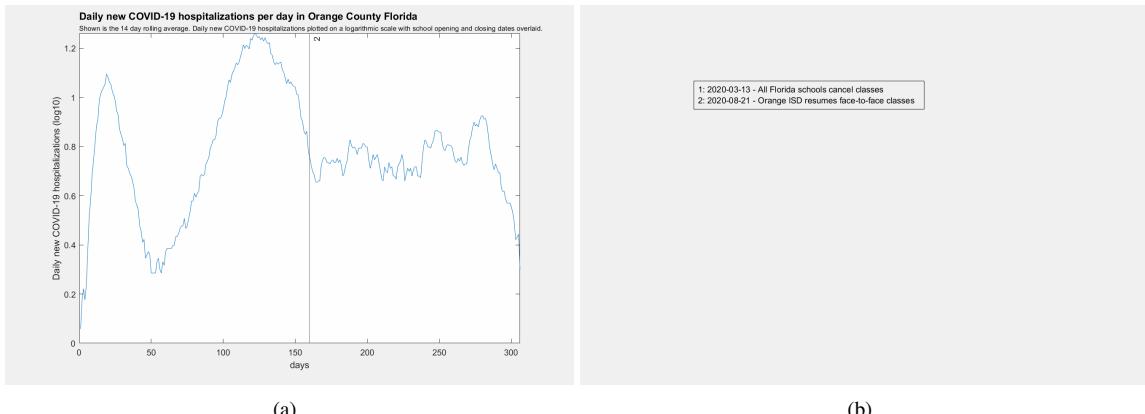
Figure 62: (a) blah (b) blah



(a)

(b)

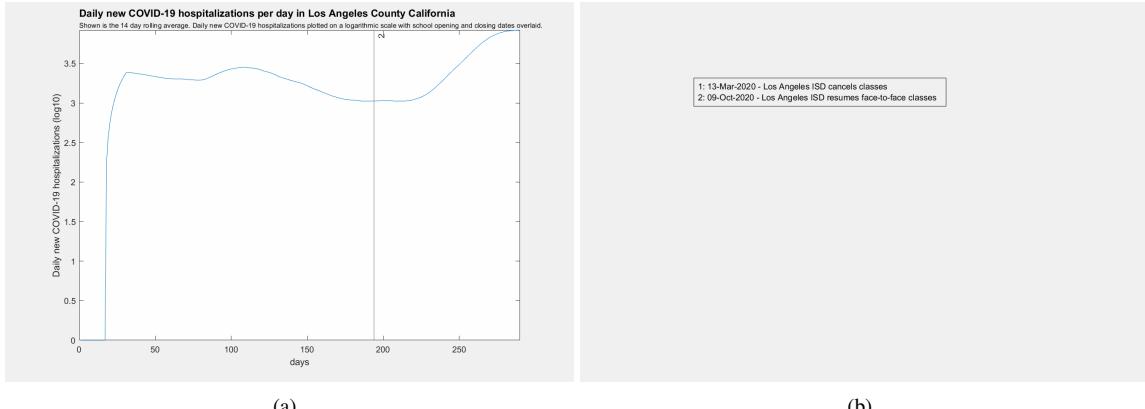
Figure 63: (a) blah (b) blah



(a)

(b)

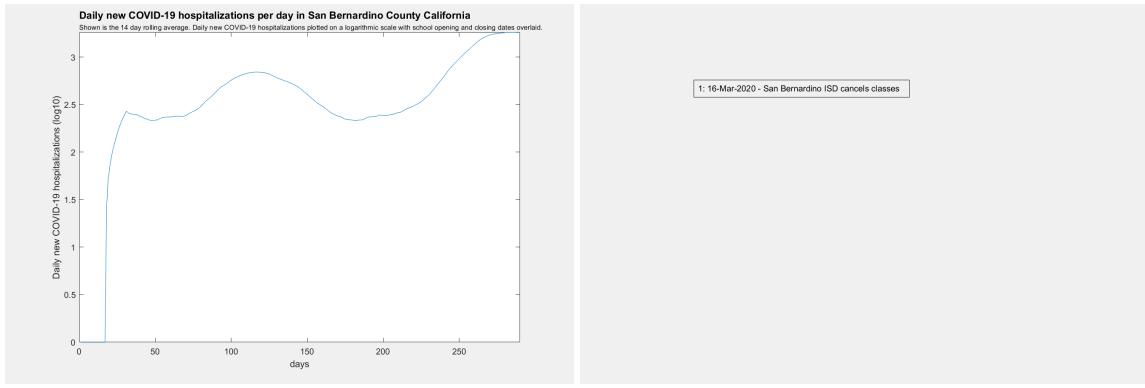
Figure 64: (a) blah (b) blah



(a)

(b)

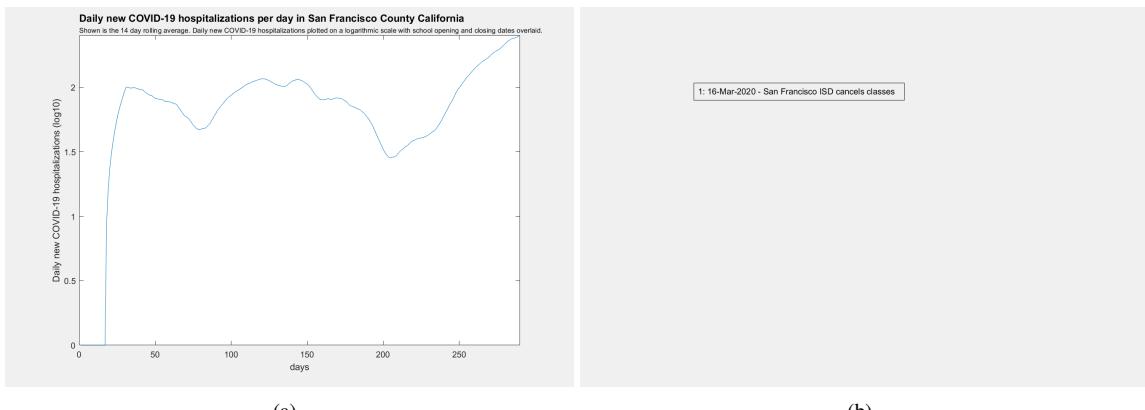
Figure 65: (a) blah (b) blah



(a)

(b)

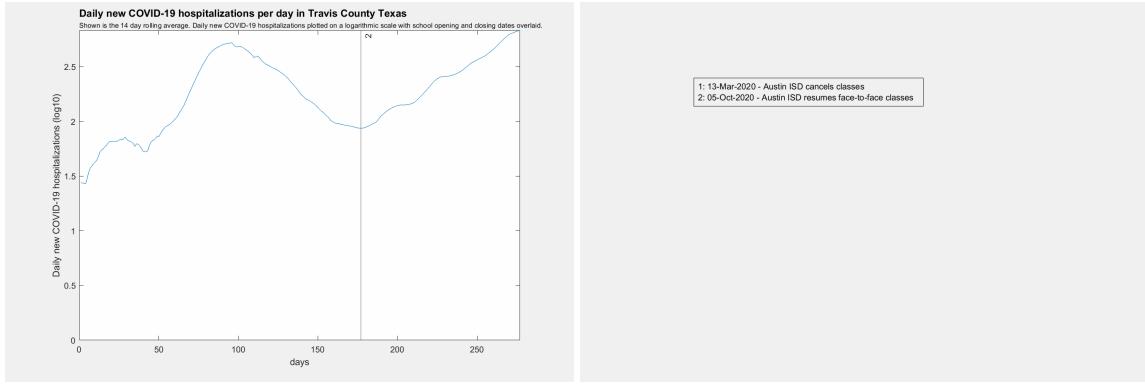
Figure 66: (a) blah (b) blah



(a)

(b)

Figure 67: (a) blah (b) blah

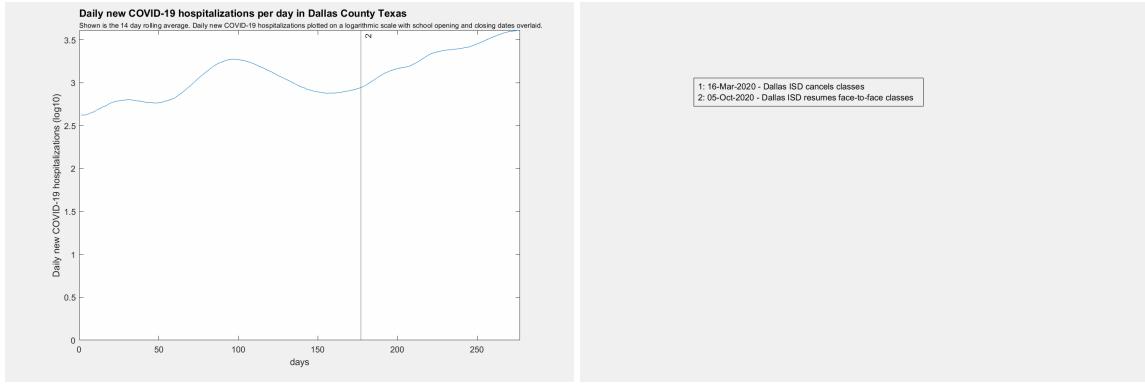


(a)

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

(b)

Figure 68: (a) blah (b) blah

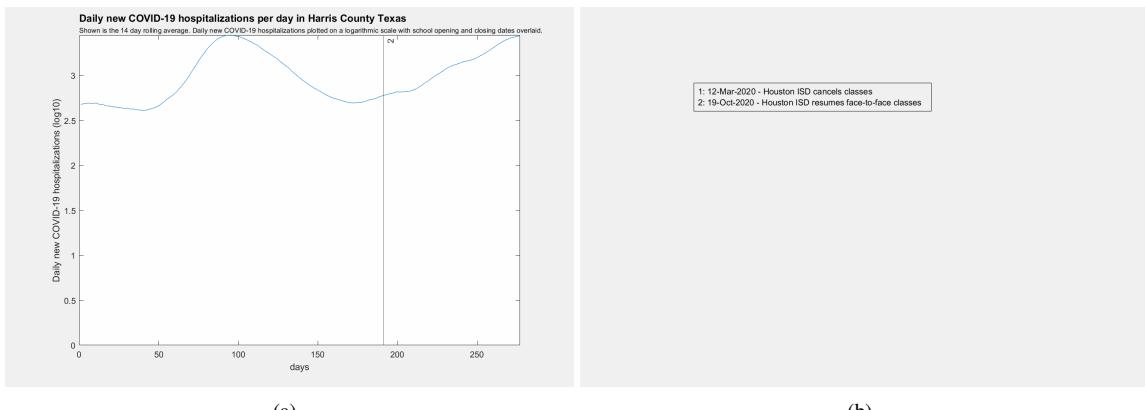


(a)

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

(b)

Figure 69: (a) blah (b) blah



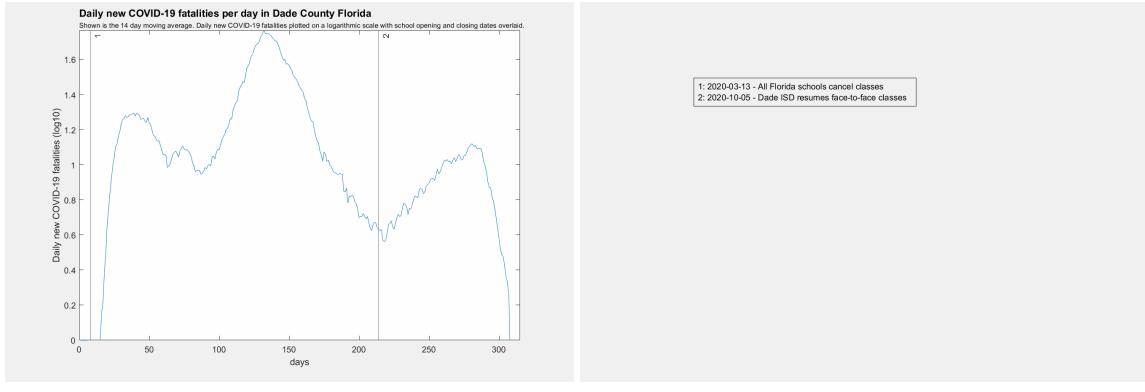
(a)

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

(b)

Figure 70: (a) blah (b) blah

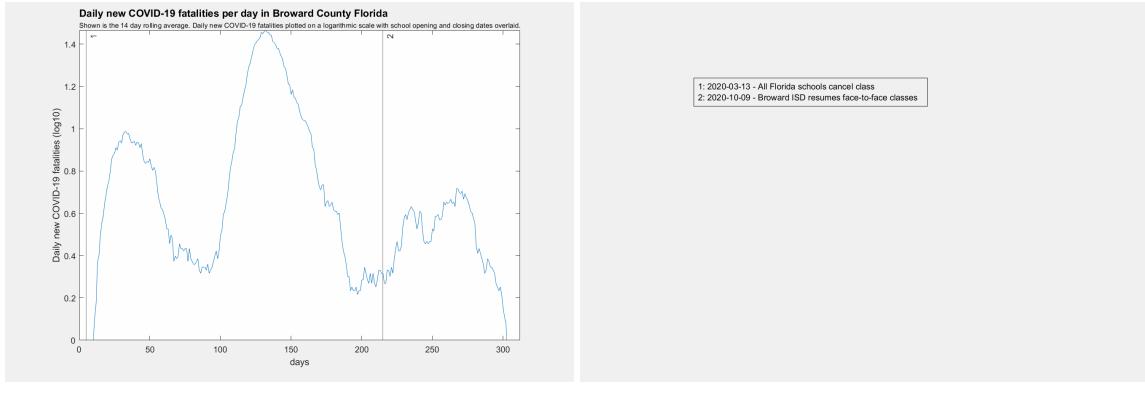
### **6.3 Schools and Daily New COVID-19 Fatalities**



(a)

(b)

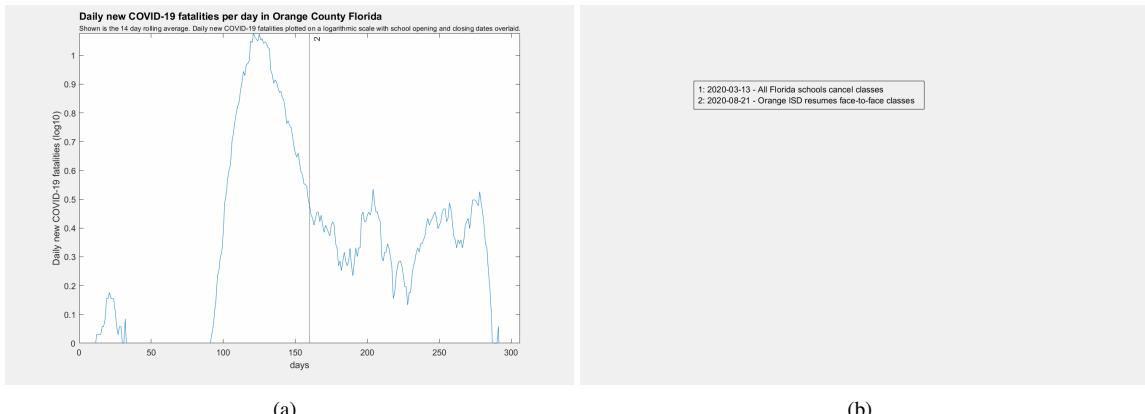
Figure 71: (a) blah (b) blah



(a)

(b)

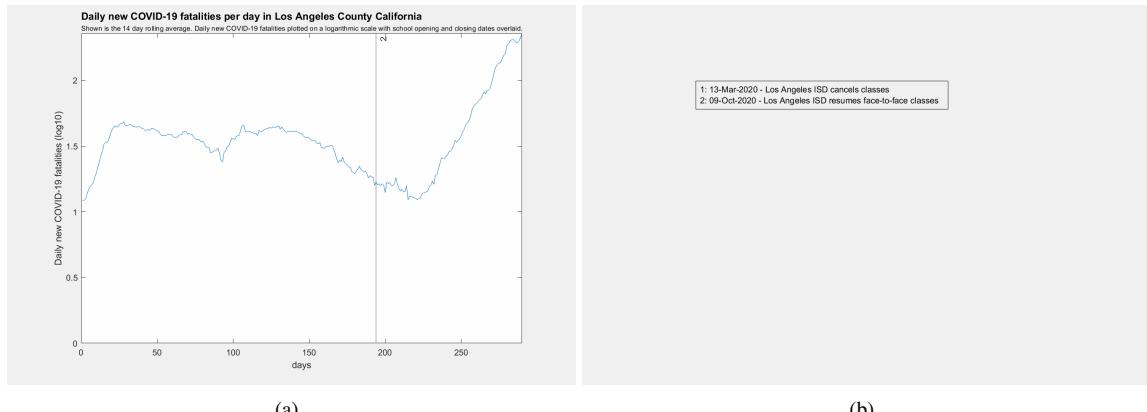
Figure 72: (a) blah (b) blah



(a)

(b)

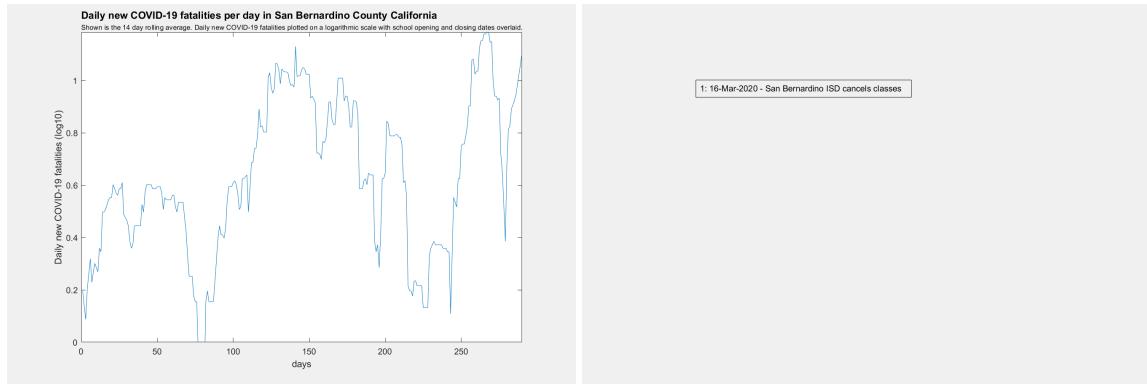
Figure 73: (a) blah (b) blah



(a)

(b)

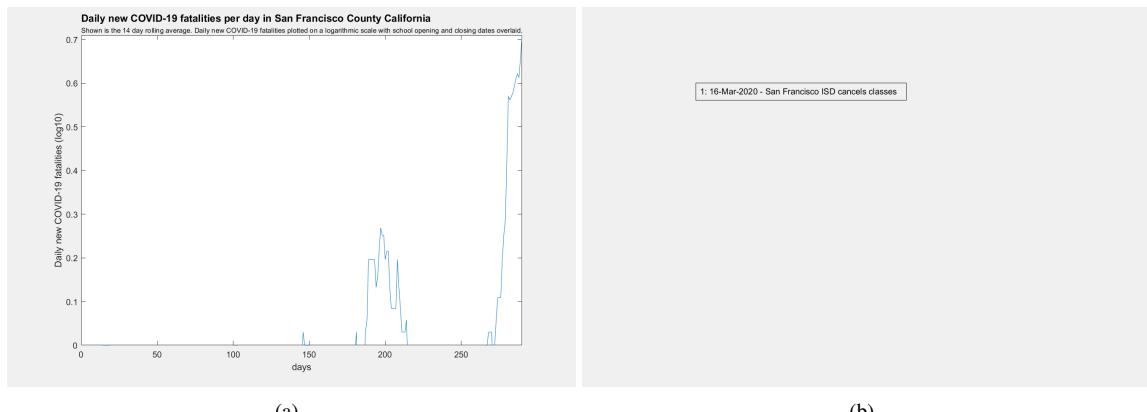
Figure 74: (a) blah (b) blah



(a)

(b)

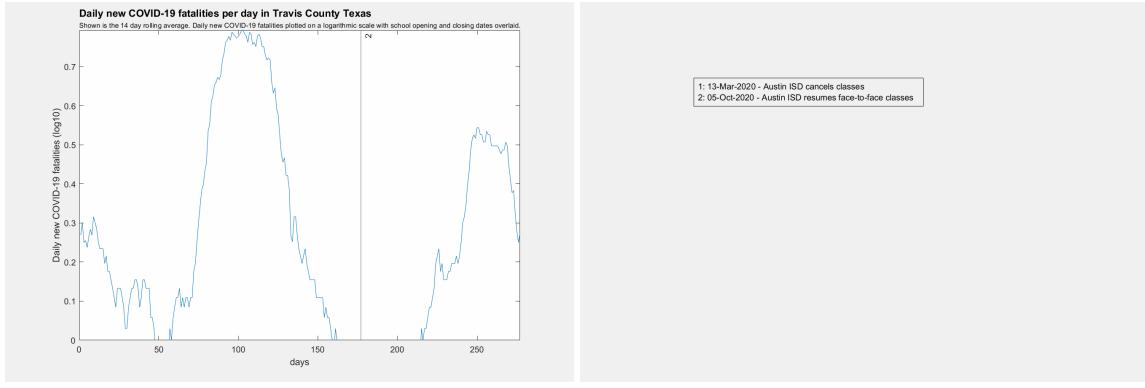
Figure 75: (a) blah (b) blah



(a)

(b)

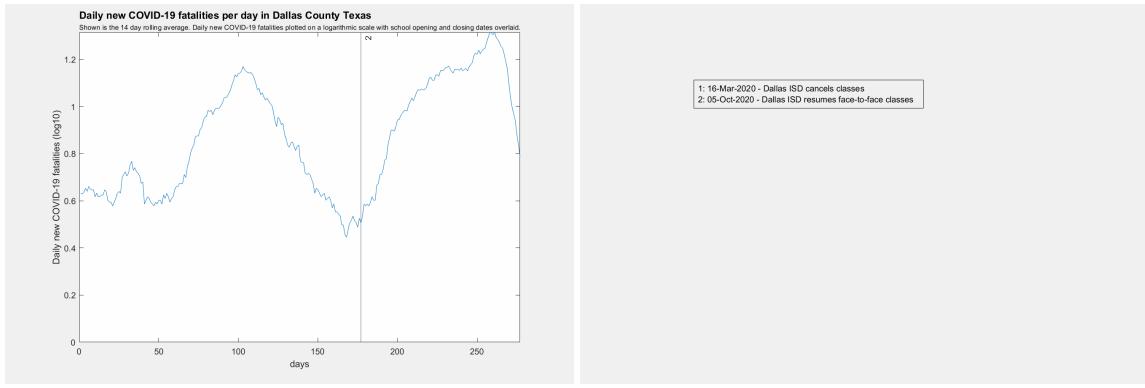
Figure 76: (a) blah (b) blah



(a)

(b)

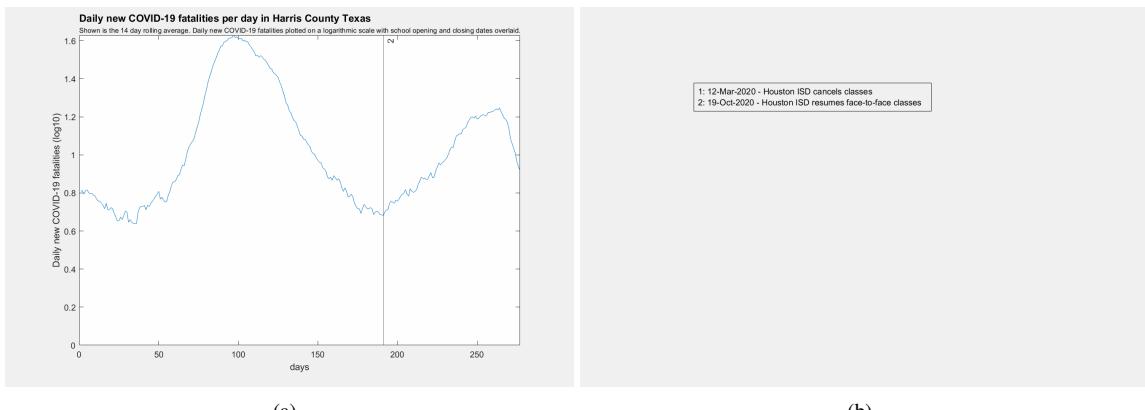
Figure 77: (a) blah (b) blah



(a)

(b)

Figure 78: (a) blah (b) blah



(a)

(b)

Figure 79: (a) blah (b) blah