

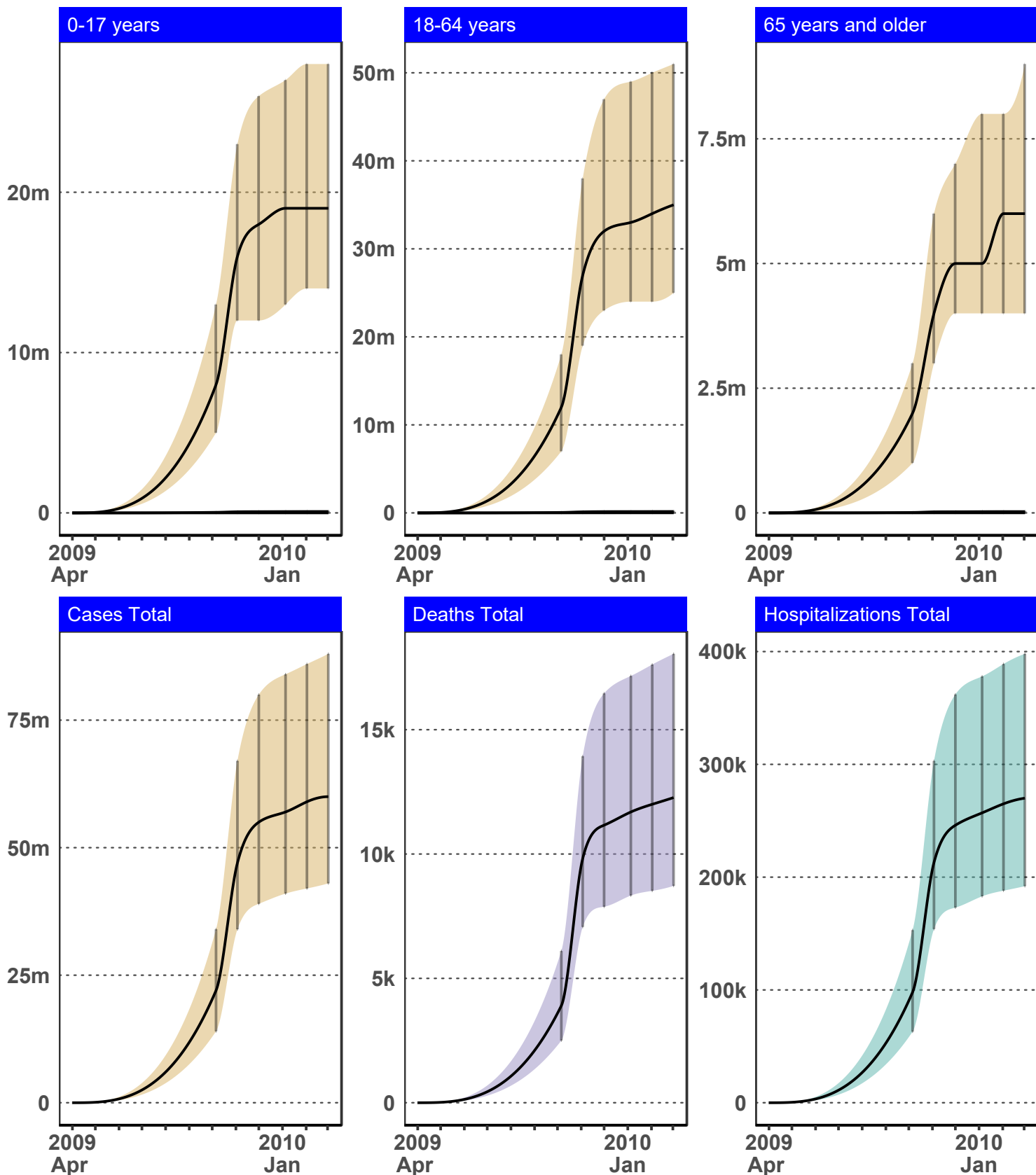
## 2009 H1N1 (swine flu pandemic) cases, deaths, and hospitalizations

Interpolated counts from counts from Oct 2009 to March 2010

The CDC provided middle, low and high, estimate counts for the categories below for each month from Oct 2009 to March 2010.

Estimates starting from April 2009 (the beginning of the H1N1 pandemic) are not given, these were interpolated using spline estimation.

Type Cases Deaths Hospitalizations



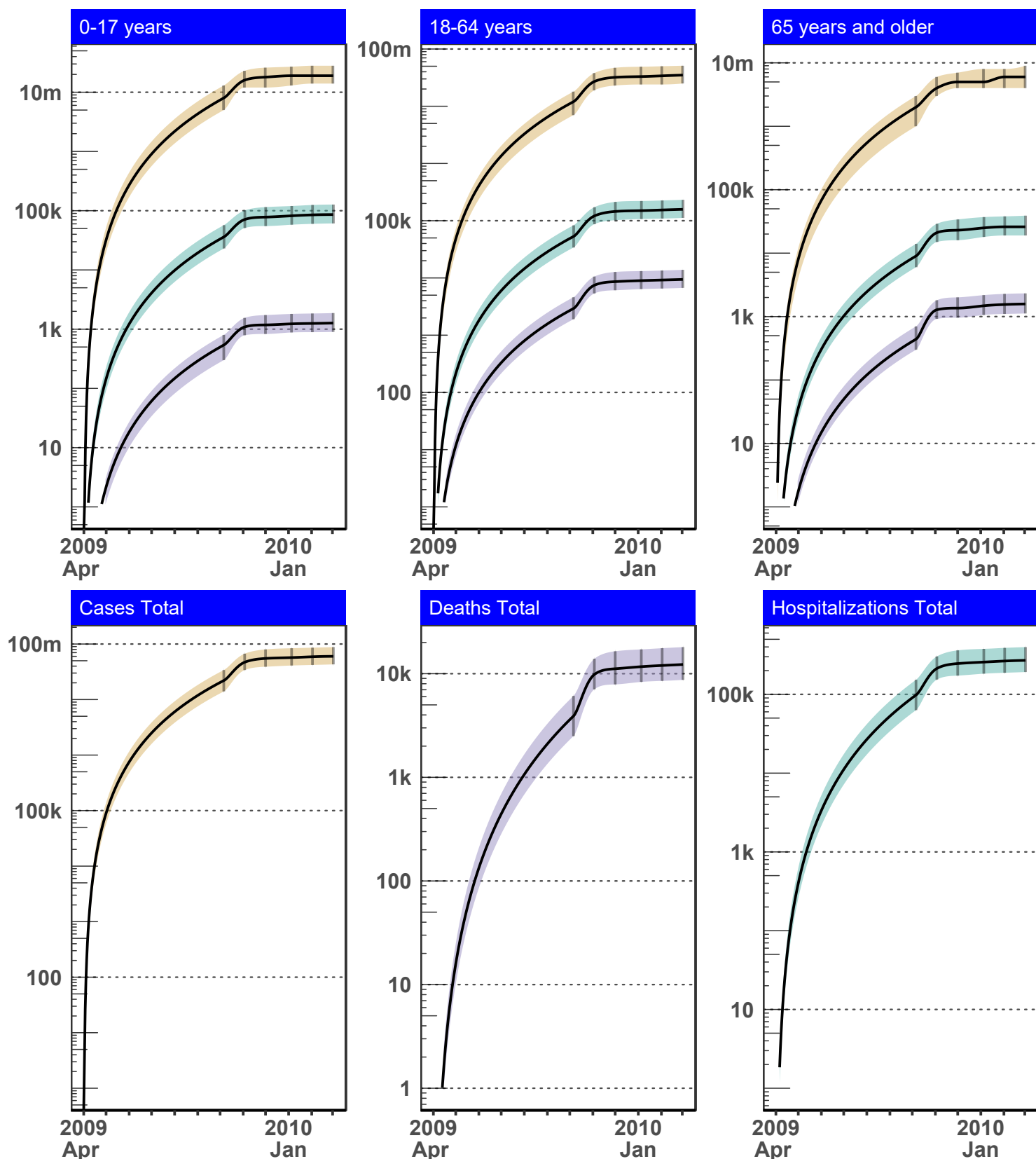
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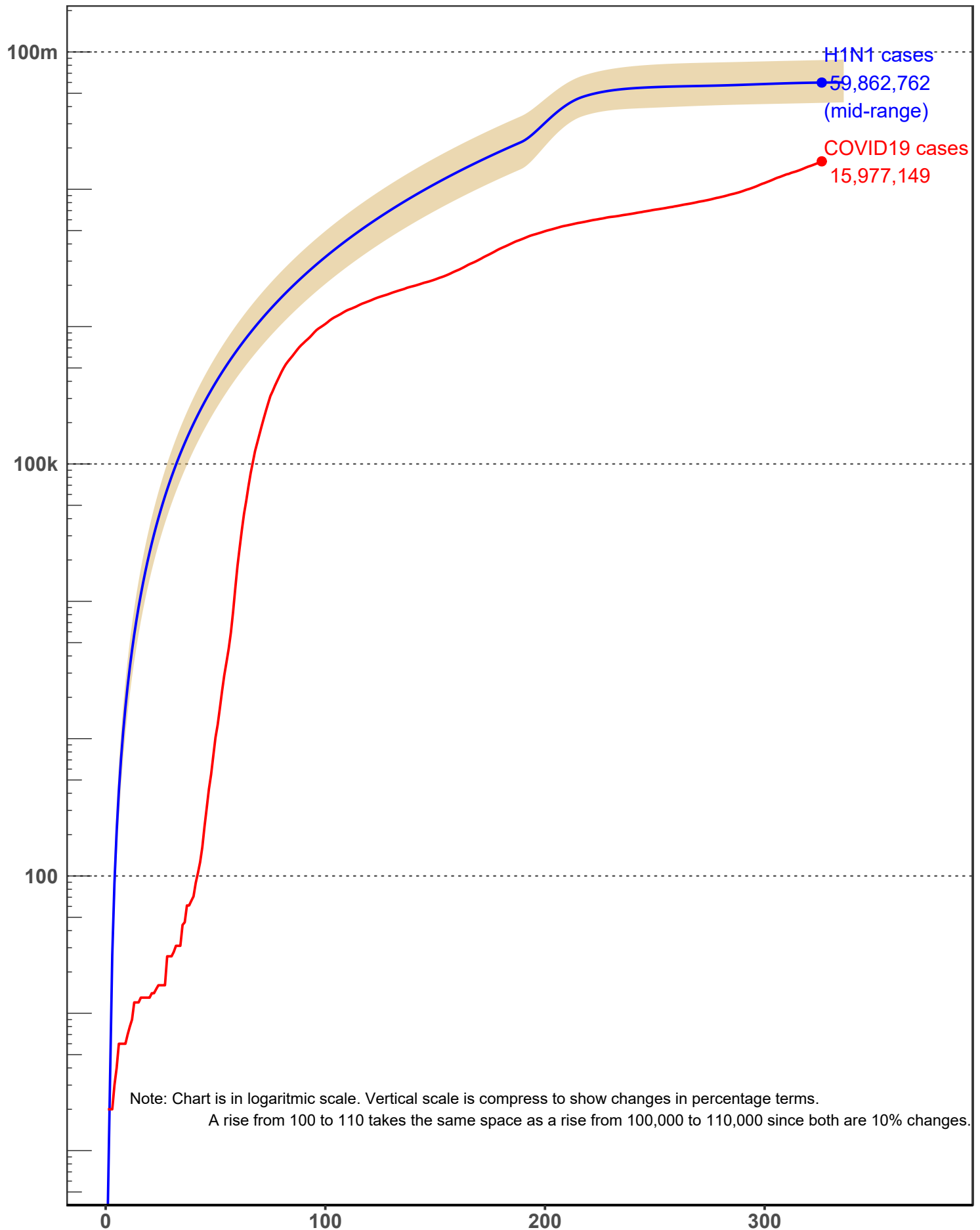
Note: y-axis is in log scale

Source: [https://www.cdc.gov/h1n1flu/estimates\\_2009\\_h1n1.htm](https://www.cdc.gov/h1n1flu/estimates_2009_h1n1.htm) (H1N1)

First case was reported on April 13, 2009 <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5815a5.htm>

# 2009 H1N1 cumulative cases by day vs Covid-19

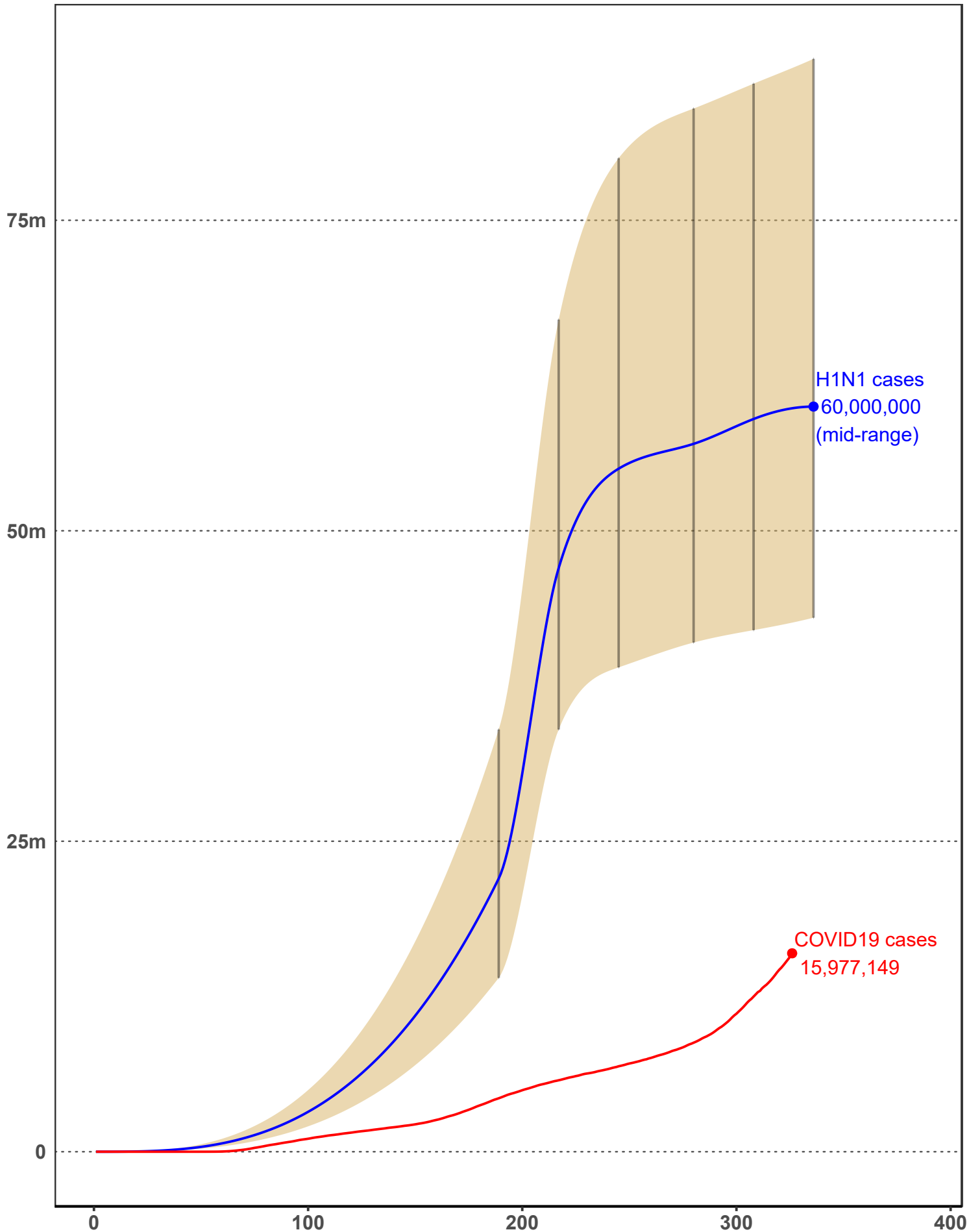
326 days after the first case



Note: Chart is in logarithmic scale. Vertical scale is compress to show changes in percentage terms.  
A rise from 100 to 110 takes the same space as a rise from 100,000 to 110,000 since both are 10% changes.

# 2009 H1N1 cumulative cases by day vs Covid-19

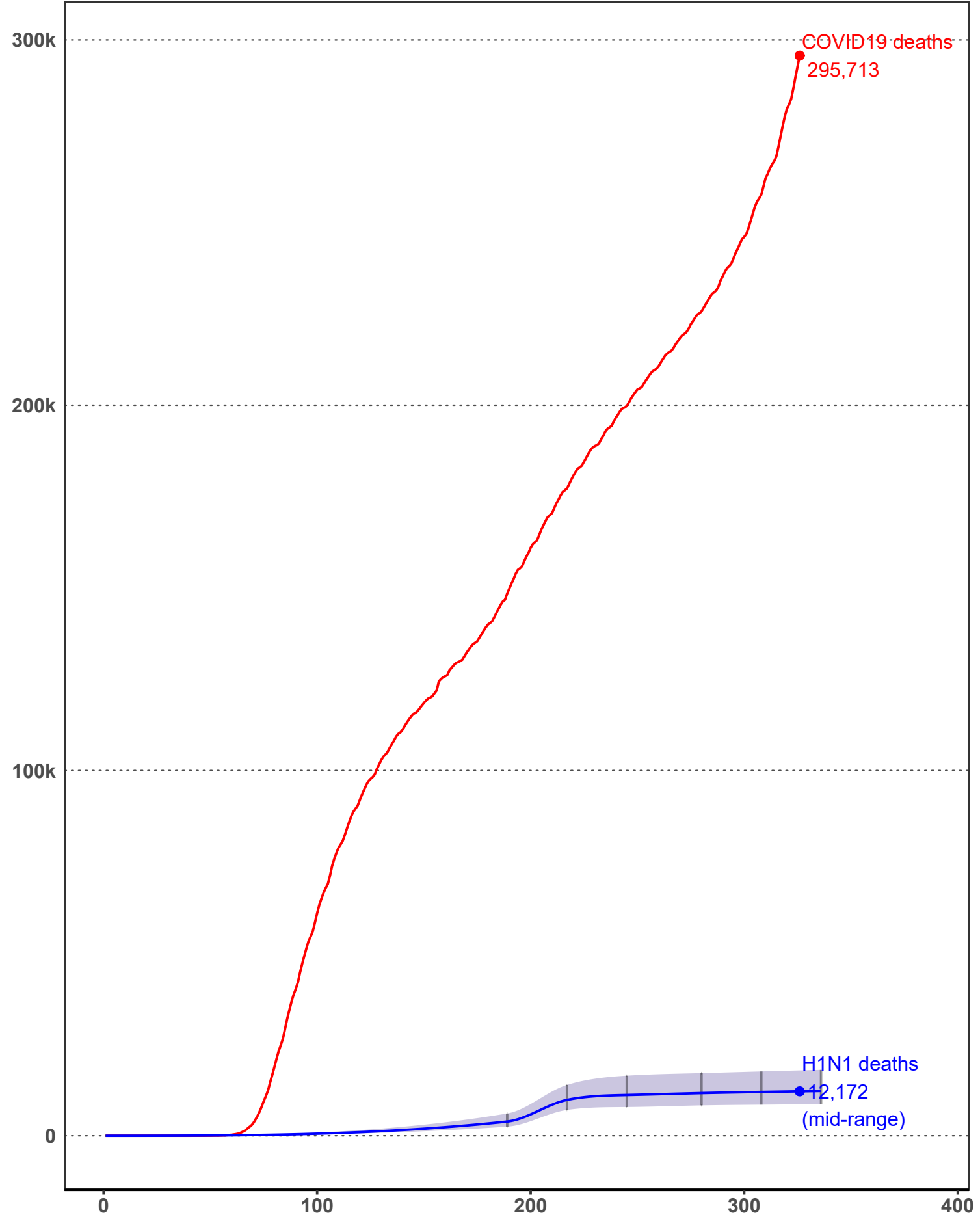
336 days after the first case



Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19); [https://www.cdc.gov/h1n1flu/estimates\\_2009\\_h1n1.htm](https://www.cdc.gov/h1n1flu/estimates_2009_h1n1.htm) (H1N1)

# 2009 H1N1 estimated deaths by day vs Covid-19 deaths

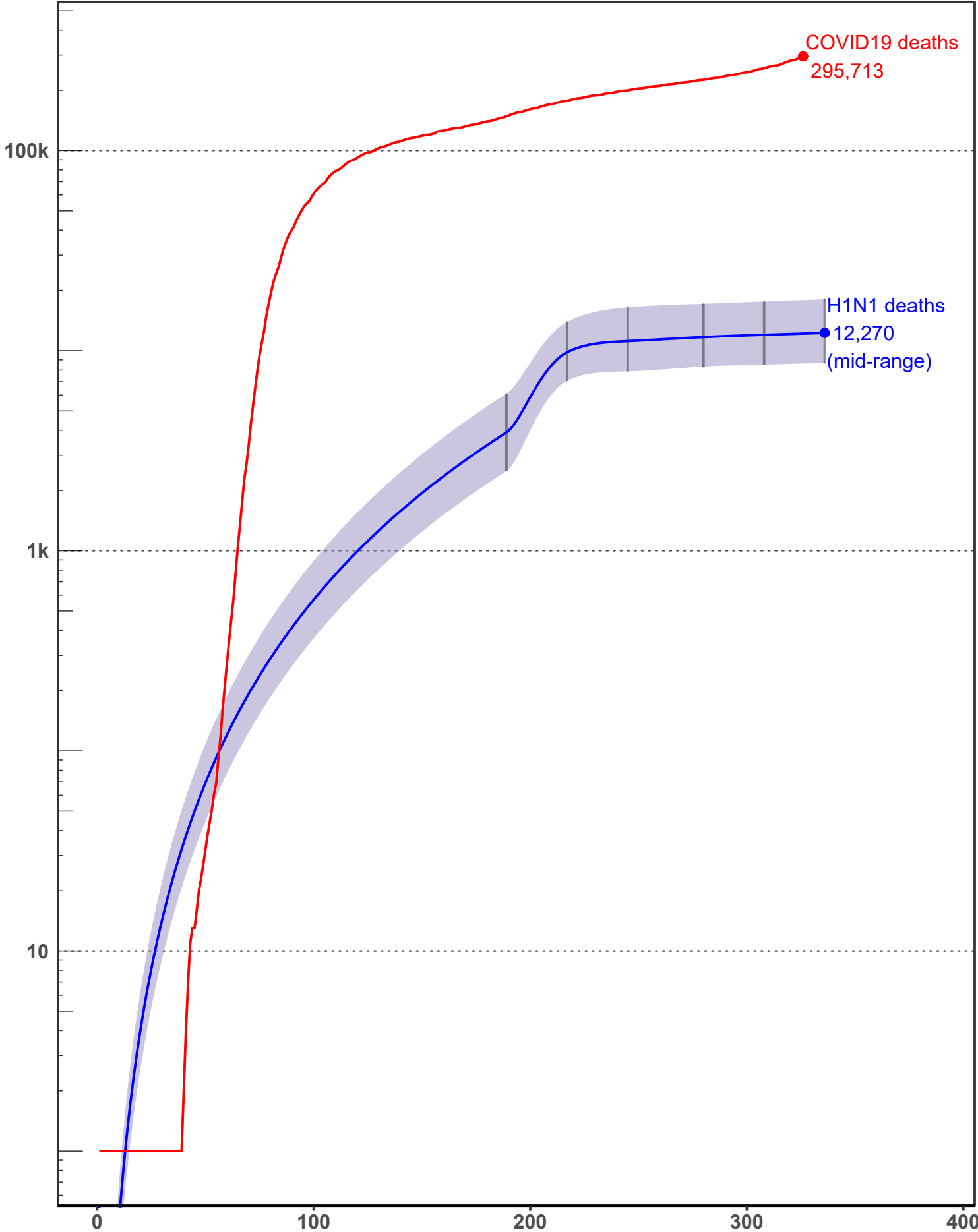
326 days after the first case



Note: y-axis is in log scale  
Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19);  
[https://www.cdc.gov/h1n1flu/estimates\\_2009\\_h1n1.htm](https://www.cdc.gov/h1n1flu/estimates_2009_h1n1.htm) (H1N1)

2009 H1N1 estimated deaths by day vs Covid-19 deaths

336 days after the first case



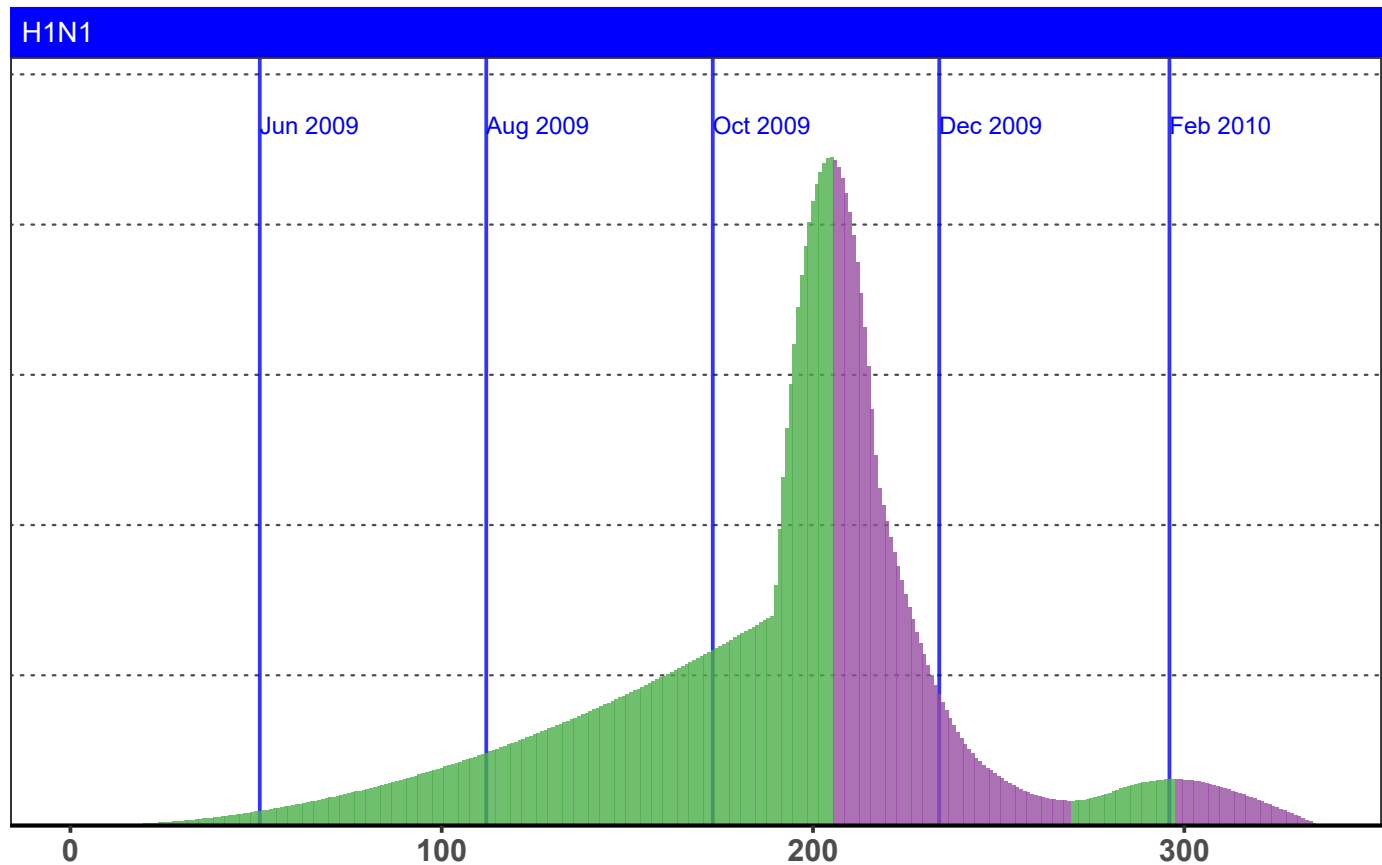
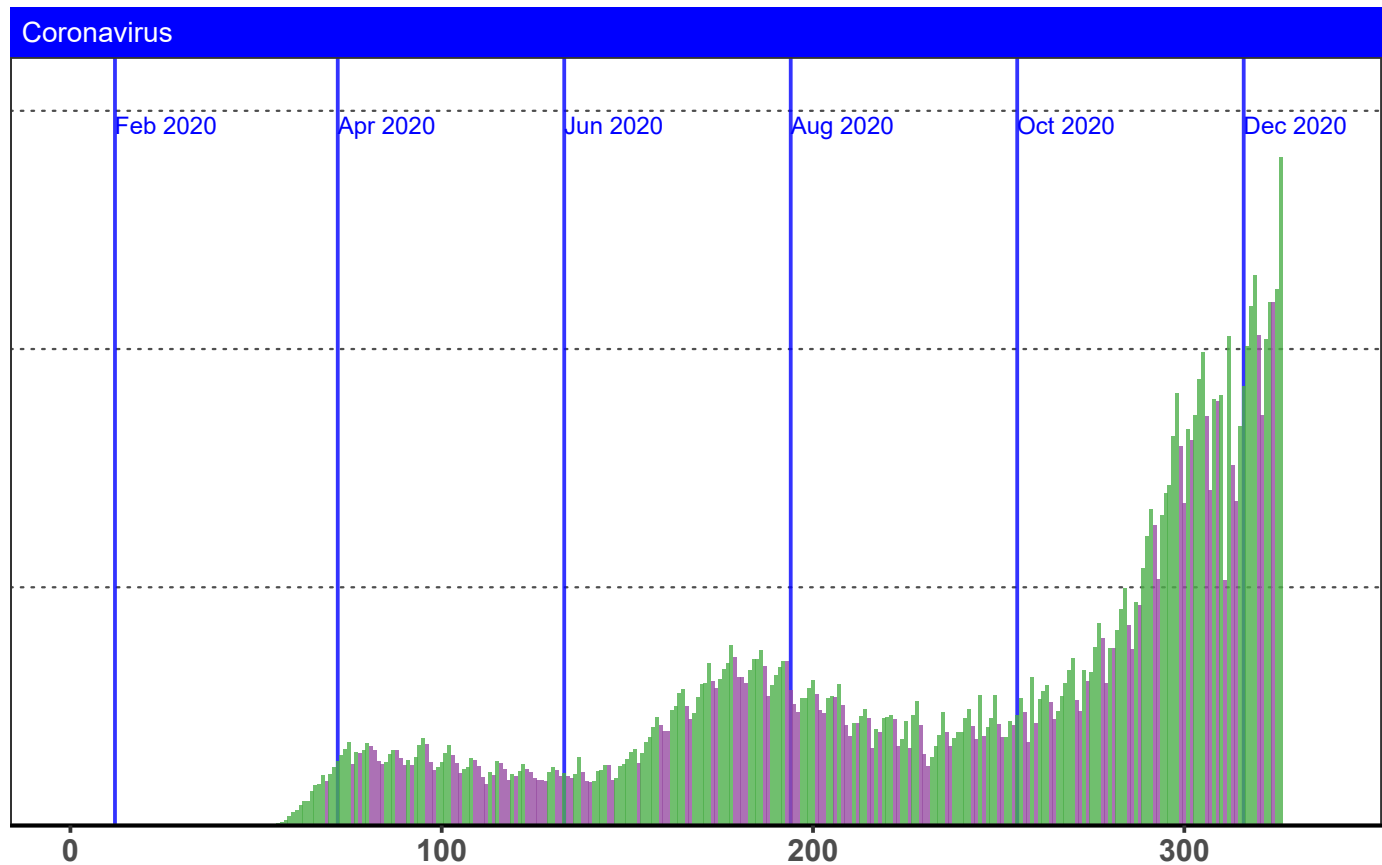
Note: y-axis is in log scale  
Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19);  
[https://www.cdc.gov/h1n1flu/estimates\\_2009\\_h1n1.htm](https://www.cdc.gov/h1n1flu/estimates_2009_h1n1.htm) (H1N1)

# 2009 H1N1 new cases by day vs Covid-19 cases

336 days after the first case

Vertical blue lines are for reference and placed every two months after the first case for each pandemic

Change Type   ■ Decreased   ■ Increased   ■ Unchanged   ■ Other



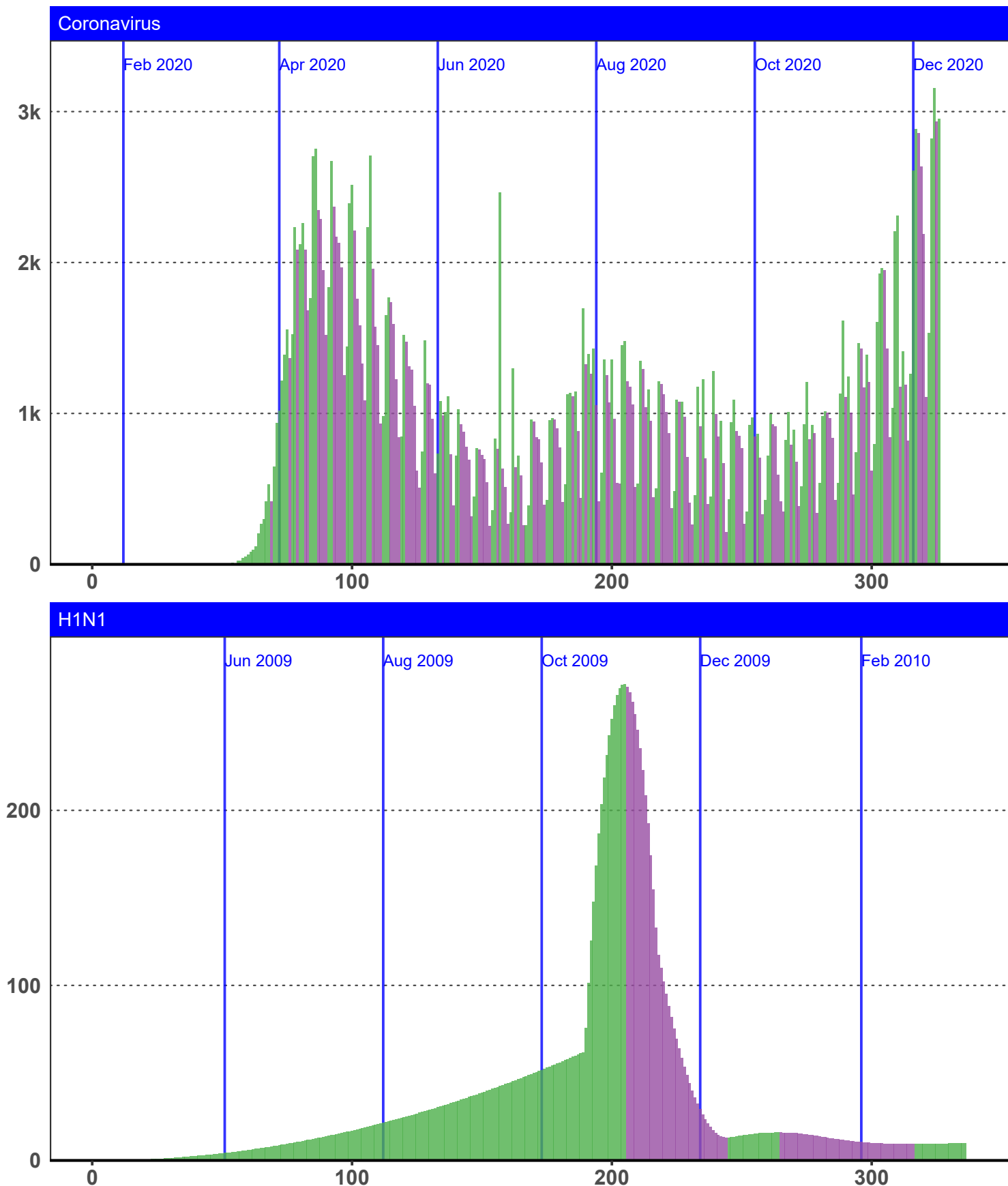
Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19);  
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# 2009 H1N1 new deaths by day vs Covid-19 deaths

336 days after the first case

Vertical blue lines are for reference and placed every two months after the first case for each pandemic

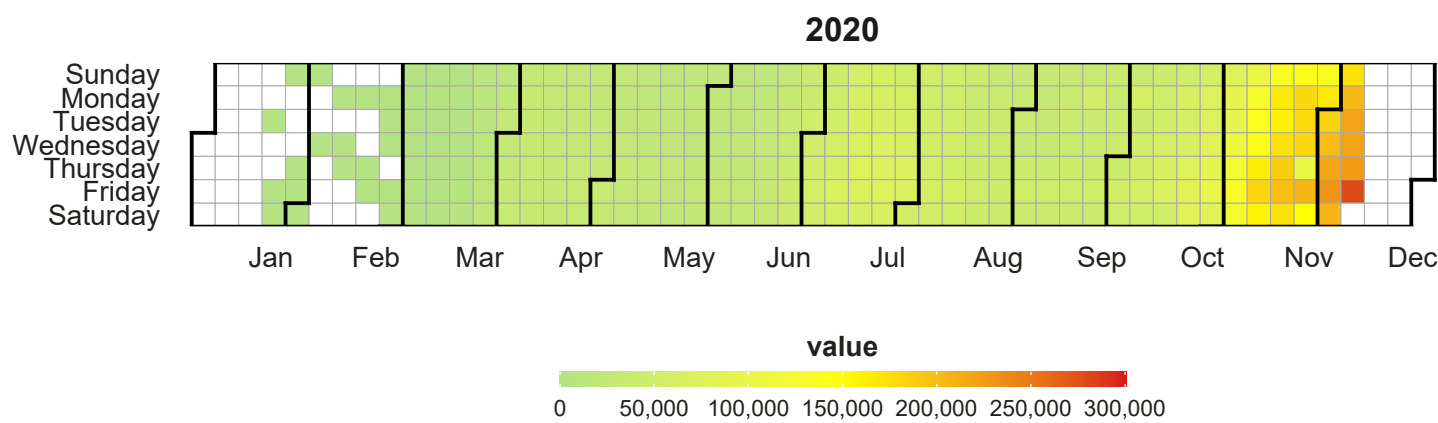
Change Type   ■ Decreased   ■ Increased   ■ Unchanged   ■ Other



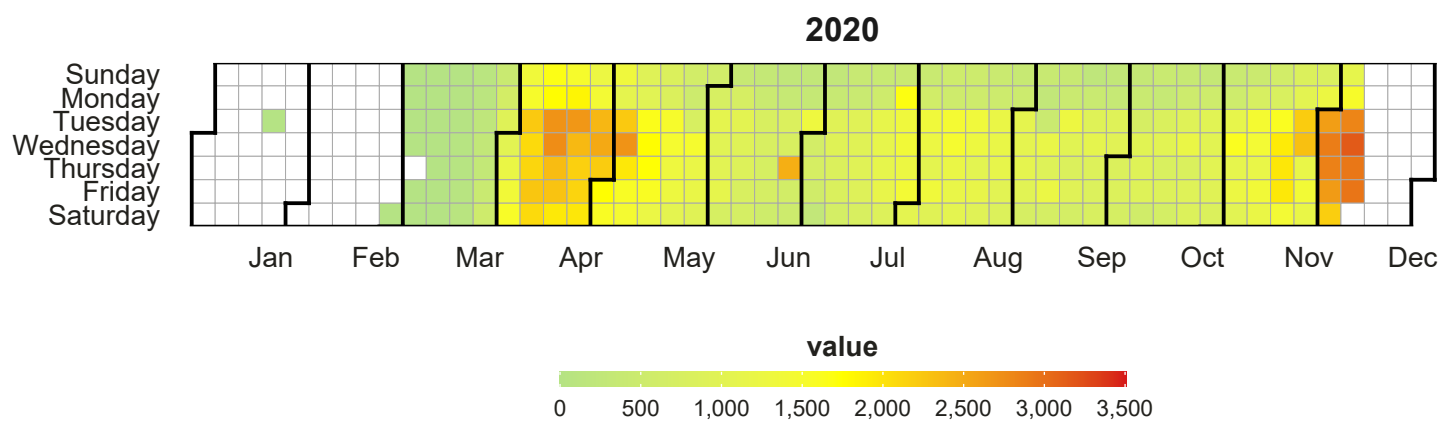
Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19); [https://www.cdc.gov/h1n1flu/estimates\\_2009\\_h1n1.htm](https://www.cdc.gov/h1n1flu/estimates_2009_h1n1.htm) (H1N1)



# COVID 19 Cases in the US



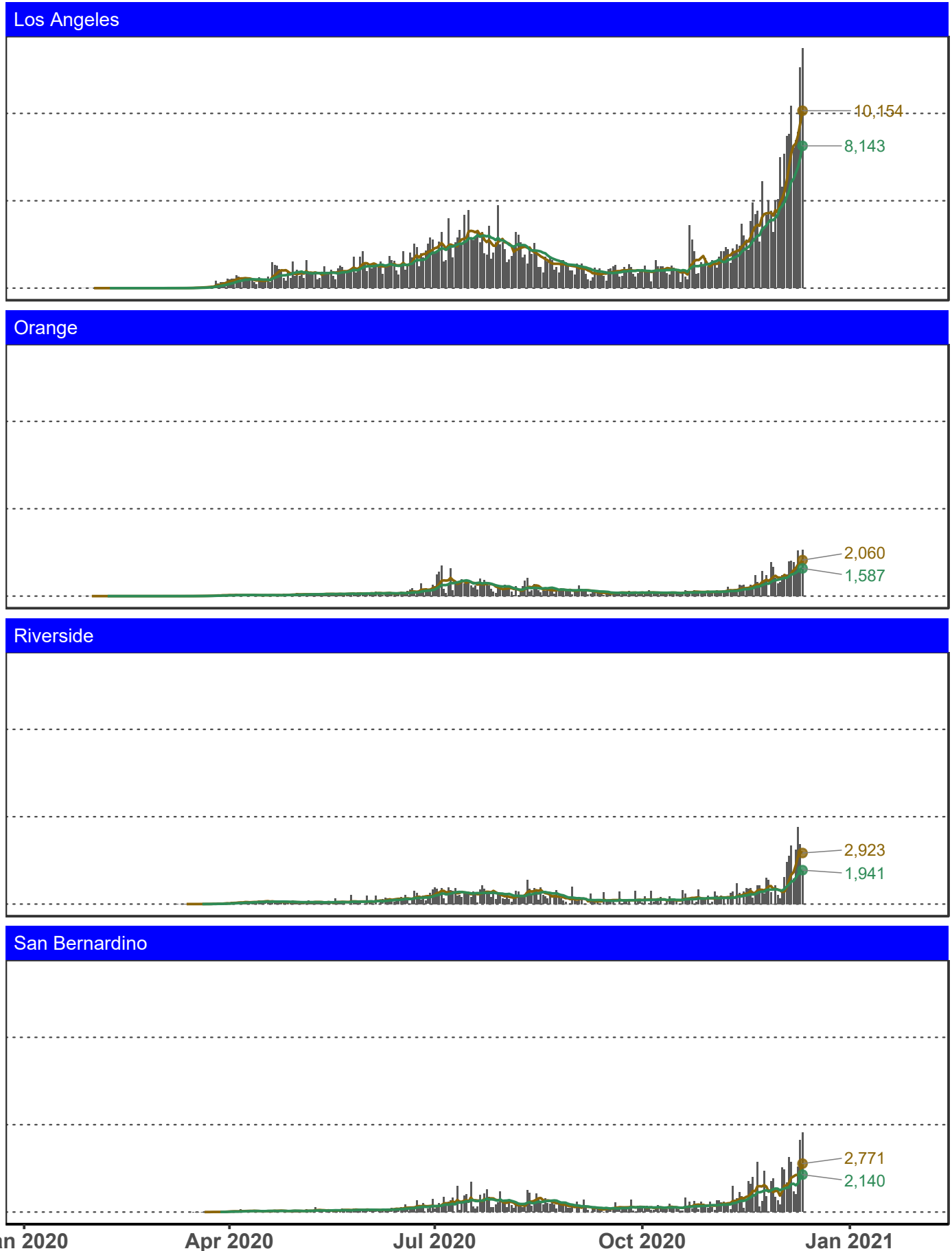
# COVID 19 Deaths in the US



# Rates by Counties

New cases, 7 and 14 days rolling average

variable    ● rollingMean07Day    ● rollingMean14Day



Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19)

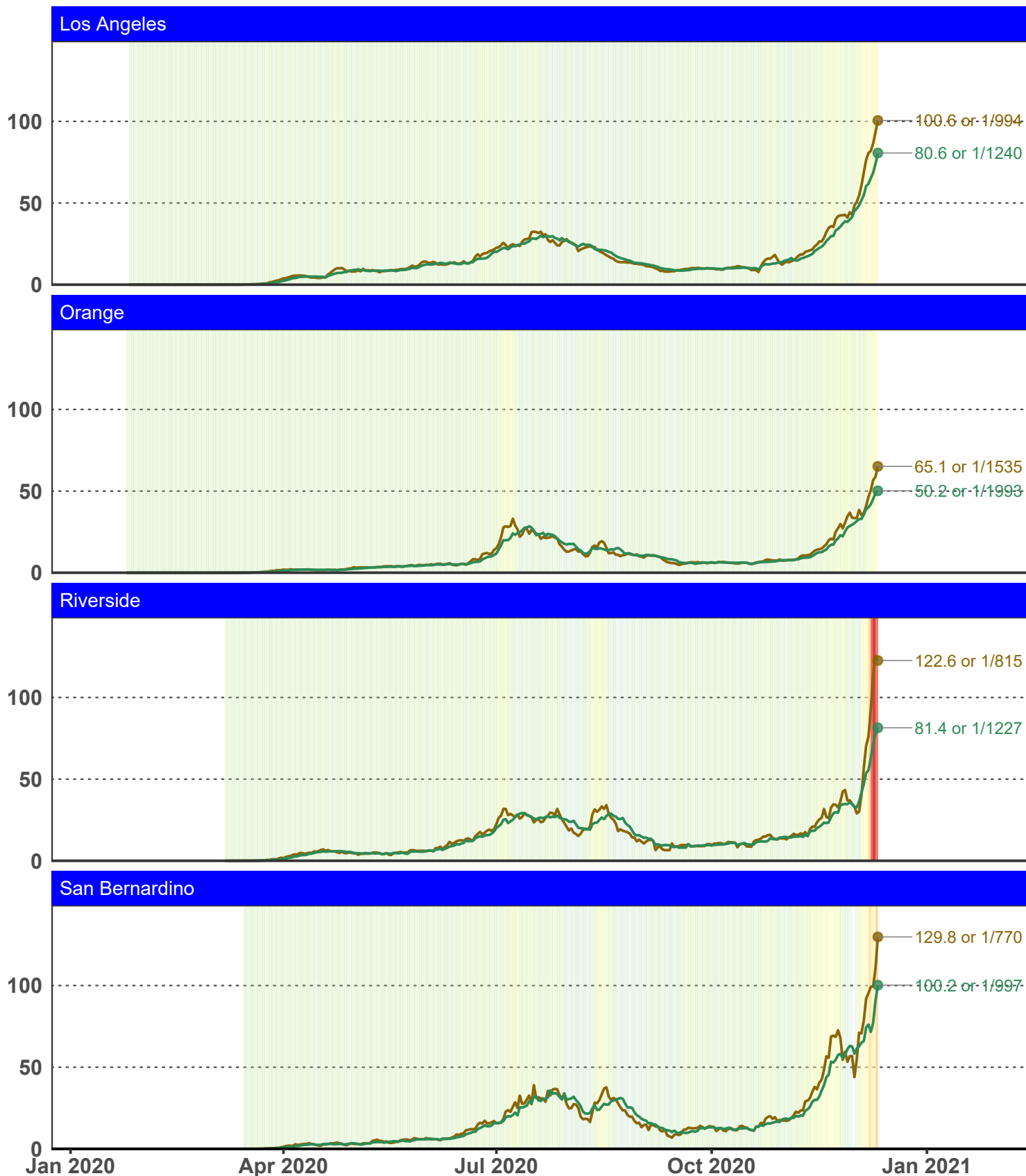
# Rates by Counties by 100K population

New cases, 7 and 14 days rolling average

Difference between  
7 and 14 days rolling average



Rolling Average — 7-day — 14-day

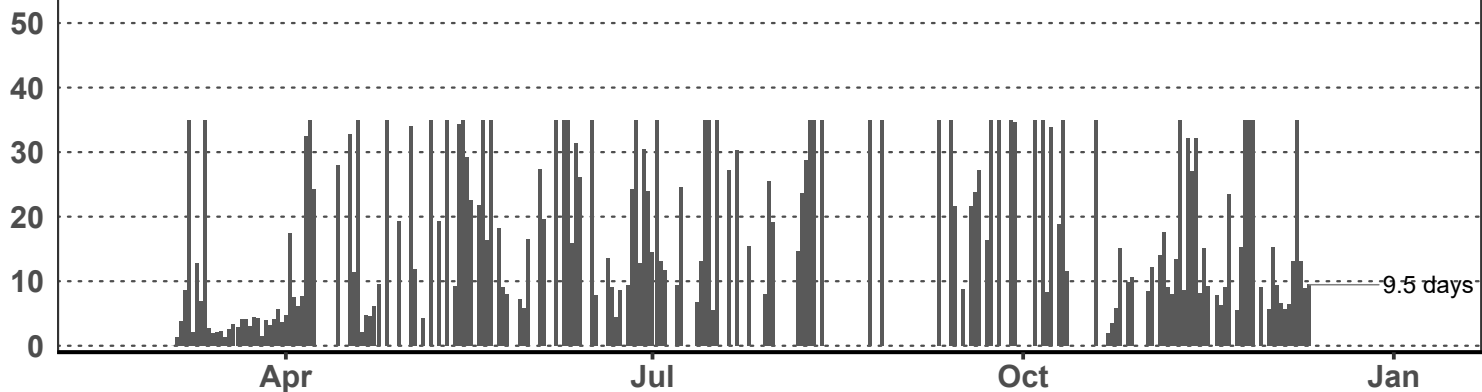


Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19)

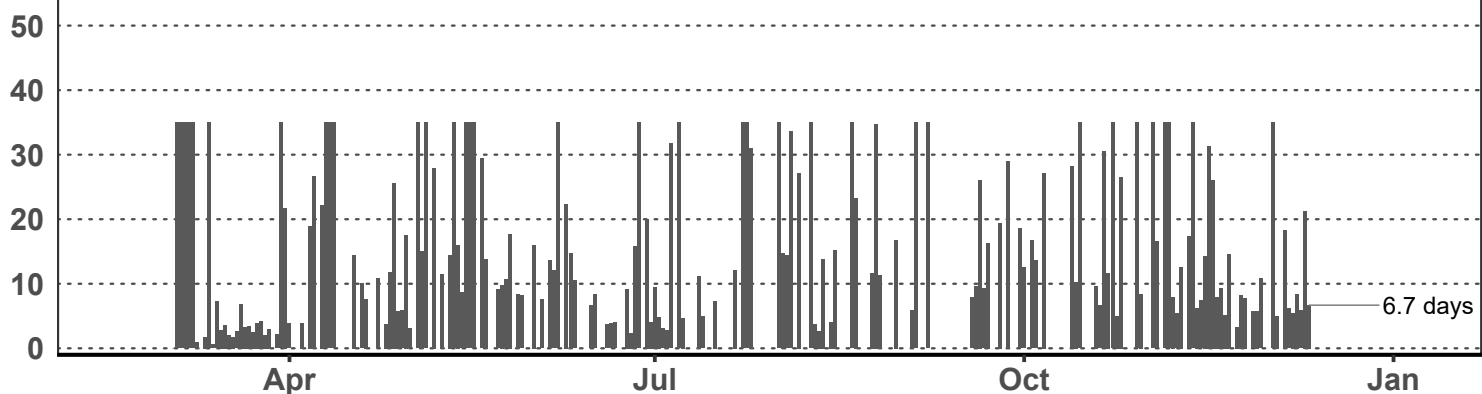
# Days to double the number of cases

based on seven day rolling average of new cases,  
for counts increase only, if the counts double in more  
than 35 days they show as 35 days.

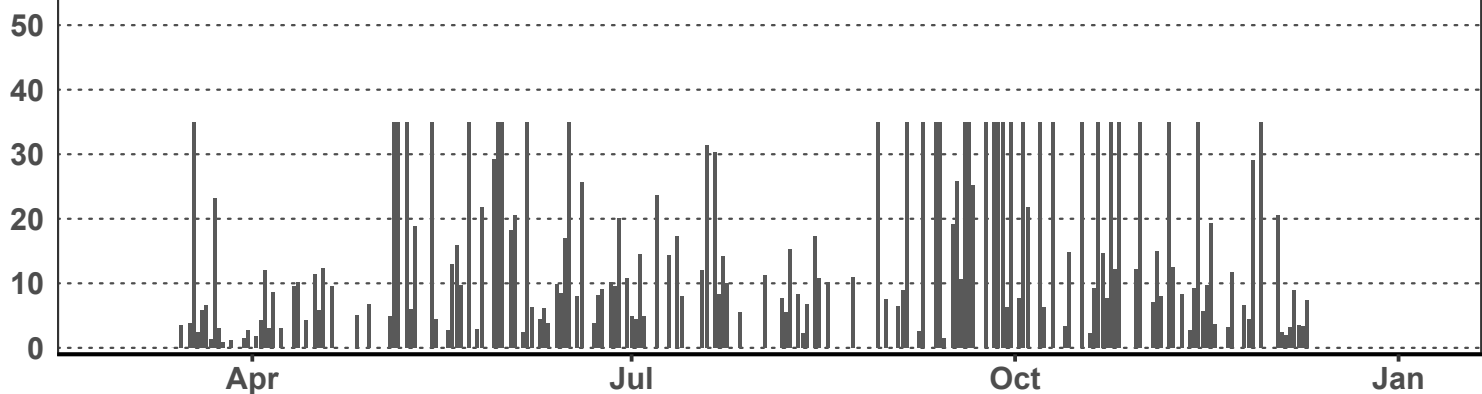
## Los Angeles



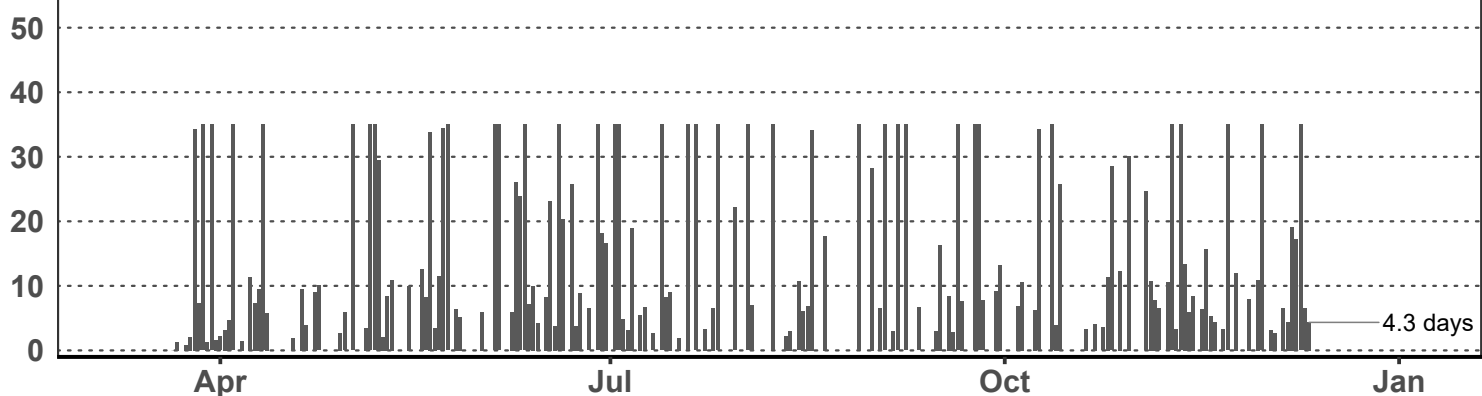
## Orange



## Riverside

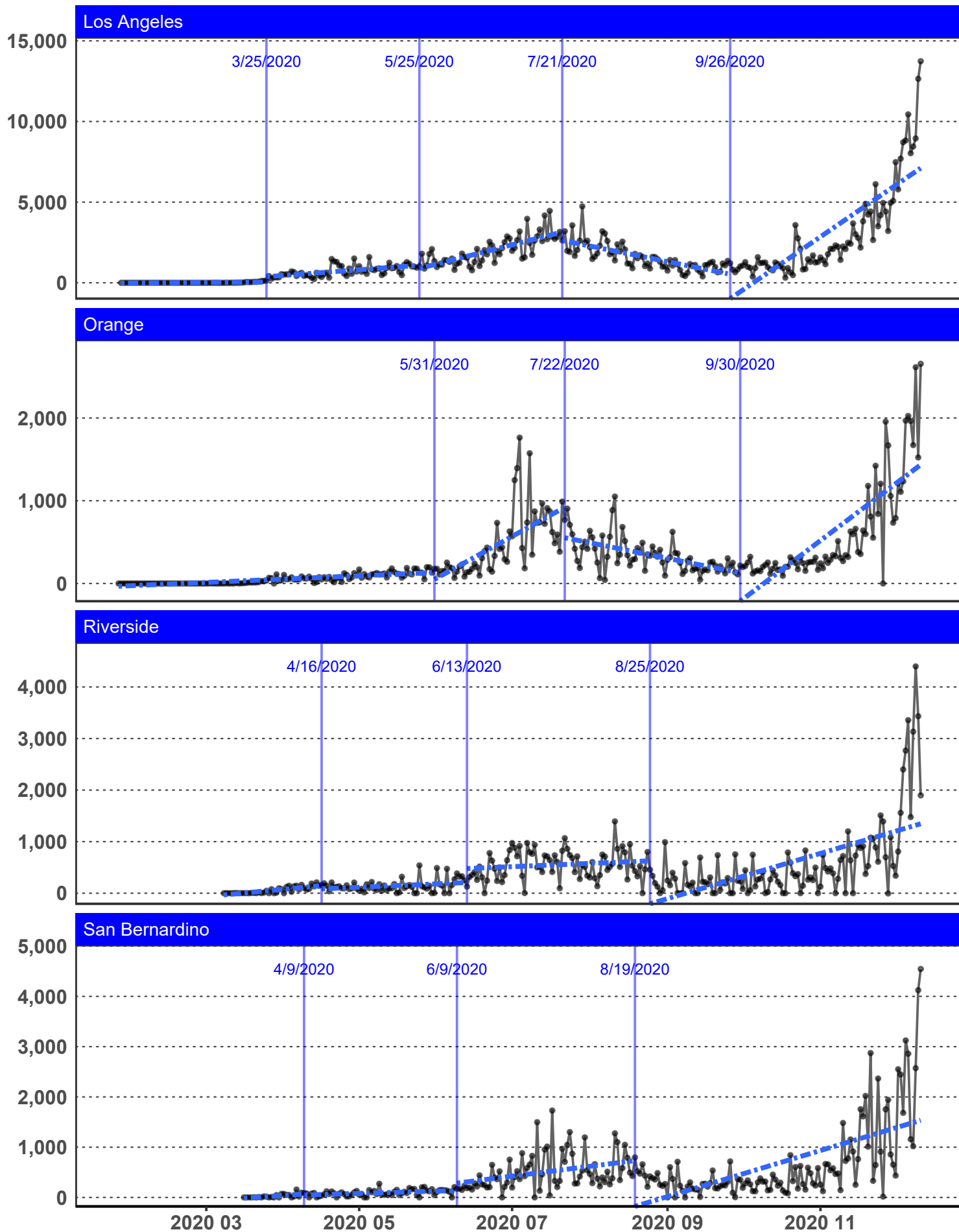


## San Bernardino



# Structural change analysis of daily cases

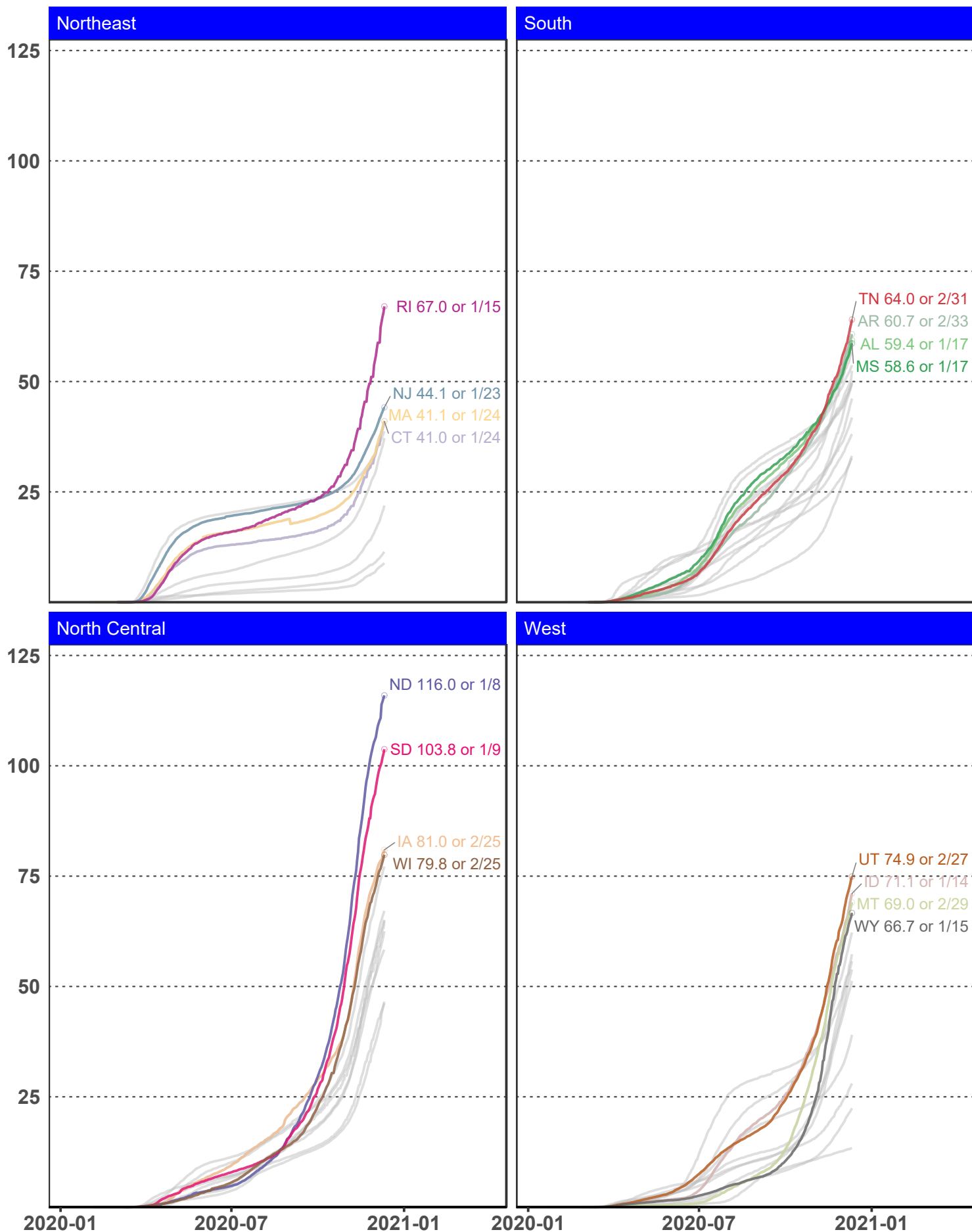
blue lines with dates reflect when there was a break in the trend for each county



Note: new break trends can developed as new daily counts are included.  
Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19)

# Cummulative cases per 1k persons by state region

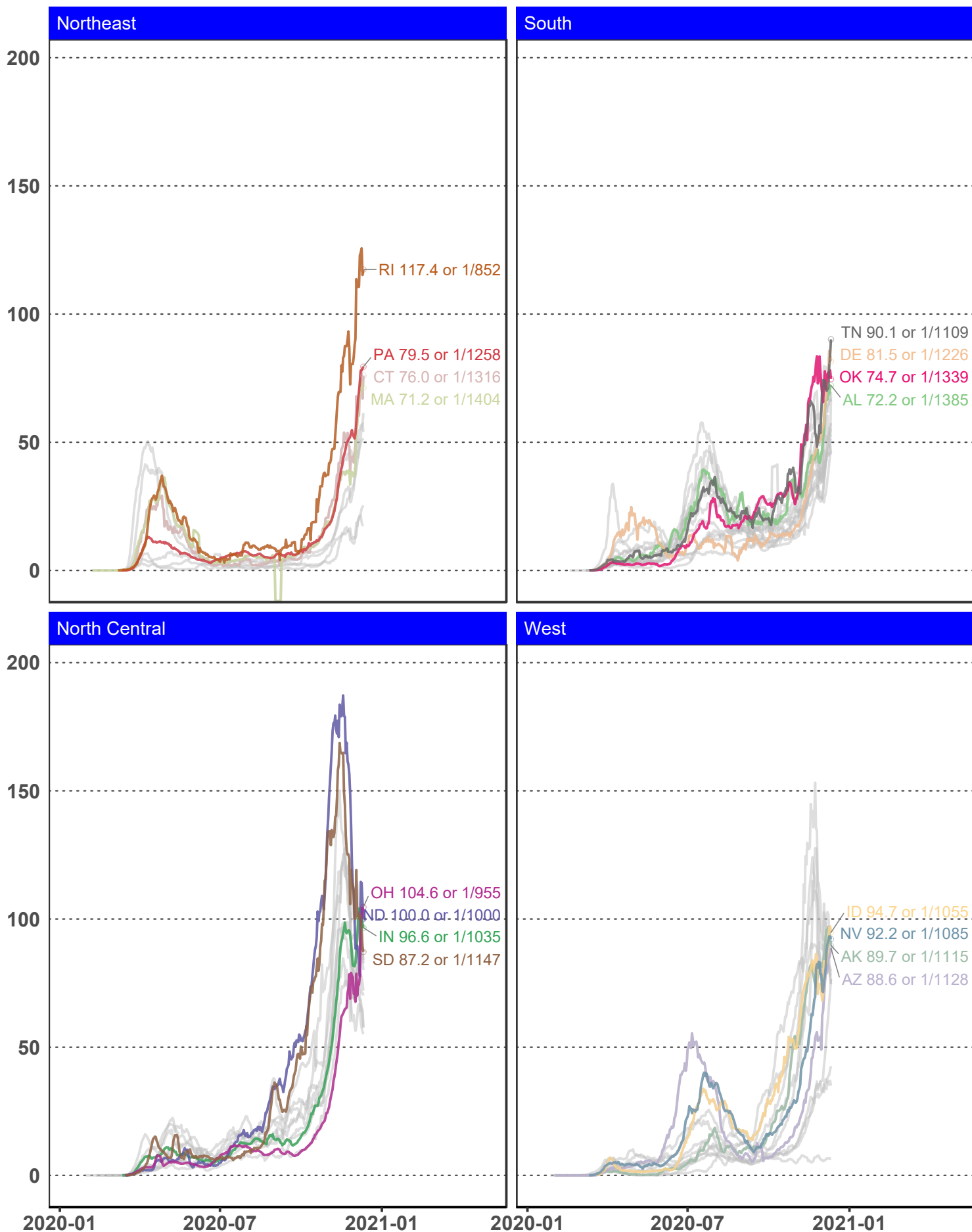
the four highest states by region are highlighted



Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19)  
 U.S. Census Bureau; American Community Survey, 2014-2018 5-year Estimates,  
 Table B01003\_001 TOTAL POPULATION; generated with tidycensus R package.

# 7-day rolling average of daily cases per 100k persons by state region

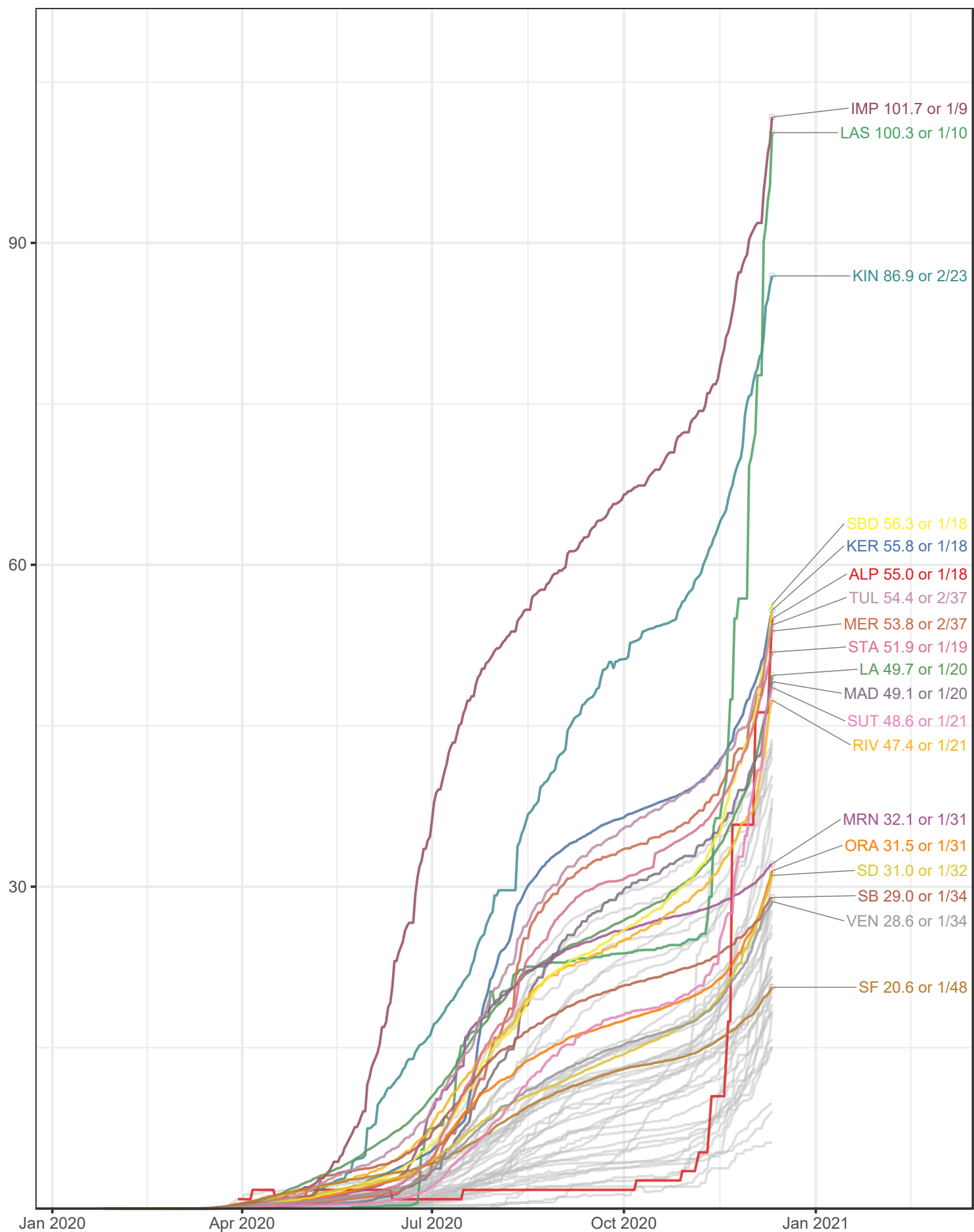
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 U.S. Census Bureau; American Community Survey, 2014-2018 5-year Estimates,  
 Table B01003\_001 TOTAL POPULATION; generated with tidycensus R package.

# Cummulative cases per 1k persons for California counties

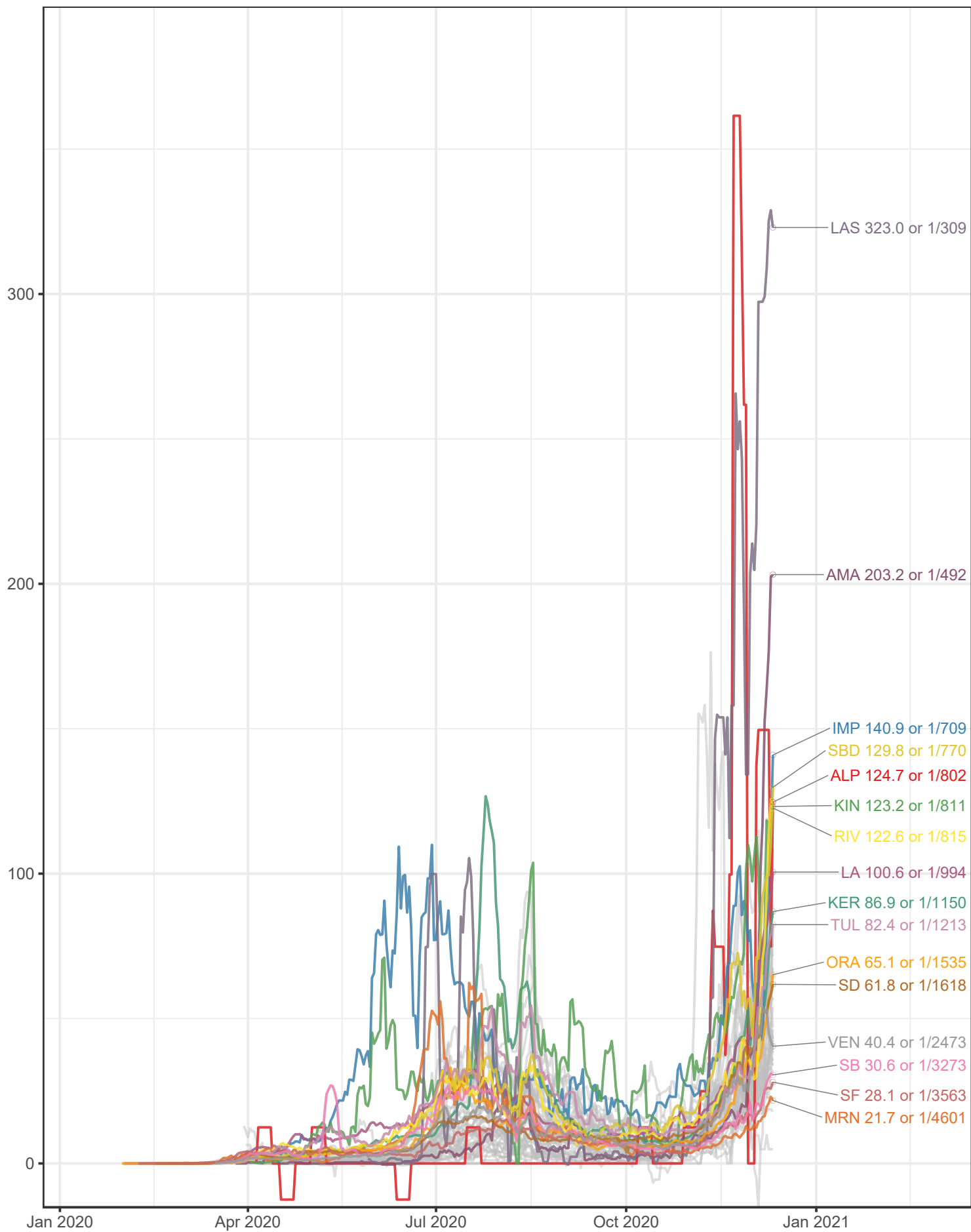
selected counties highlighted





# 7-day rolling average of daily cases per 100k persons by California counties

## selected counties highlighted



Sources: The New York Times, <https://github.com/nytimes/covid-19-data> accessed 2020-12-12 (Covid19)  
 U.S. Census Bureau; American Community Survey, 2014-2018 5-year Estimates,  
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